

THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY



TEN-YEAR SITE PLAN FY 2008 – FY 2017

June 2006

Jefferson Lab is managed and operated for the U.S. Department of Energy
By Jefferson Science Associates, LLC
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Table of Contents

<u>A. Executive Summary</u>	1
<u>B. Overview of Site F&I</u>	3
<u>C. Current and Future Missions for the Site</u>	5
<u>D. Facilities and Infrastructure</u>	
1. Vision, Goals, and Strategy (VGS)	11
2. Process for Identifying F&I Needs and Development of Plans to Meet the VGS	18
3. Land Use Plans	18
4. Excess Real Property	18
5. Long Term Stewardship	19
6. Replacement Plant Value (RPV) Estimates	19
7. Maintenance	20
8. Deferred Maintenance Reduction (DMR)	20
9. Recapitalization and Modernization	22
9.a. IGPP	22
9.b. Line Items	22
9.c. GPP	23
10. Space Bank Analysis	24
11. Site's Alternate Investment Plan for GPP and SLI Line Items and Excess Facilities Disposition (EFD)	24
12. Performance Indicators and Measures	26
13. Energy Management	26
14. Leasing & Third Party / Non-Federal Funded Construction of New Buildings	28
<u>Appendices</u>	
Appendix 1 Existing Facilities Drawing	29
Appendix 2 Site Aerial Photo	30
Appendix 3 Land Use Plans (Jefferson Lab Master Plan)	31
Appendix 4 Inventory of Buildings and Infrastructure	32
Appendix 5 Site Utility System Drawings	38
Appendix 6 FY08 Integrated Facilities and Infrastructure (IFI) Crosscut Budget Submission	46
Appendix 7 Prioritized list of Line Items Projects	50
Appendix 8 List of Facilities to be Formally Declared Excess	51
Appendix 9 List of Excess Facility Projects	52
Appendix 10 Complete Project Listing	53
<u>Figures and Tables</u>	
Figure B-1 Age of Laboratory Space	3
Table B-2 Lab Space Distribution (Oct 2005)	5
Figure B-3 Use and Condition of Laboratory Space	5
Table C-1 Business Lines and capabilities	6
Table C-2 Summary of Expected Program Funding and Staffing (\$M)	9

Table D-1	Replacement Plant Value Estimates	19
Table D-2	Lab's Site Maintenance Funding Plan	20
Table D-3	Estimated DM and ACI Based on Site DMR and Other Funding	21
Table D-4	Planned Deferred Maintenance Reduction Projects	22
Table D-5	Space Bank Analysis	24
Table D-6	Comparison of SC's Current F&I Investment Plan to the Site's Alternative Investment Plan for Direct Funded Needs	25
Table D-7	Current Leases	28
Table D-8	Potential Leases	28

Cover Photos: From top left clockwise; City of Newport News Applied Research Center (ARC), Accelerator Site with three experimental halls at bottom, CEBAF Center (main administration building), and Commonwealth Funded FEL Facility

Acronym List

ACI	Asset Condition Index (1-FCI)
ARC	Applied Research Center
AUI	Asset Utilization Index
BES	Office of Basic Energy Science
CAS	Condition Assessment Inspections
CEBAF	Continuous Electron Beam Accelerator Facility
CHL	Central Helium Liquifier
CSC	Computer Sciences Corporation
DM	Deferred Maintenance
DOD	Department of Defense
DOE	Department of Energy
EEL	Experimental Equipment Lab
EFD	Excess Facilities Disposition
EH&S	Environmental Health & Safety
EM	Environmental Management
ERL	Energy Recovering Linacs
ESnet	Energy Sciences Network
F&I	Facilities & Infrastructure
FCI	Facility Condition Index (DM/RPV)
FEL	Free Electron Laser
FIMS	Facility Information Management System
FNAL	Fermi National Accelerator Laboratory
FTE	Full Time Equivalent
FTS	Federal Telecommunication System
FY	Fiscal Year (1 October to 30 September)
GeV	Giga (billion) electron volt
Gpm	Gallon Per Minute
GSA	General Services Administration
GPP	General Plant Project
HEP	High Energy Physics
HVAC	Heat, Ventilation, and Air Conditioning
ICW	Industrial Cooling Water
ILC	International Linear Collider
IWS	Intermediate Water System
ISDN	Integrated Services Digital Network
JLab	Thomas Jefferson National Accelerator facility
JSA	Jefferson Science Associates, LLC
K	Thousand
kV	Kilovolt
kW	Kilowatt
LAN	Local Area Network
LCW	Low Conductivity Water
LF	Linear Feet
LINAC	Linear Accelerator
LQCD	Lattice Quantum Chromodynamics

MARS	Management Analysis Reporting System
MCC	Machine Control Center
MII	Maintenance Investment Index (Actual Maintenance Cost/RPV)
M	Million
MCC	Machine Control Center
mbit/sec	Million bits per second
MeV	Million electron volts
MOU	Memorandum of Understanding
MW	Megawatts
MVA	Million Volt Amps
NASA	National Aeronautical and Space Administration
NP	Office of Nuclear Physics
OSF	Other Structures & Facilities
PA	Public Address
PSI	Pounds per square inch
PVC	Polyvinyl Chloride
QA	Quality Assurance
QCD	Quantum Chromodynamics
R&D	Research & Development
RIA	Rare Isotope Accelerator
RIC	Rehab & Improvement Cost
RPAM	Real Property Asset Management
RPV	Replacement Plant Value
SC	Office of Science
Sec	Second
SF	Square Feet
SLI	Science Laboratory Infrastructure
SNS	Spallation Neutron Source
SREL	Space Radiation Effects Laboratory
SRF	Superconducting Radio Frequency
SURA	Southeastern Universities Research Association, Inc
TBD	To Be Determined
TRIC	Total Rehab & Improvement Cost
TJNAF	Thomas Jefferson National Accelerator facility
TYSP	Ten Year Site Plan
VARC	Virginia Associated Research Campus
WAN	Wide Area Network

A. Executive Summary

Overview of Jefferson Lab's Programs and Real Property Assets

The Thomas Jefferson National Accelerator Facility (TJNAF or Jefferson Lab), located in Newport News, Virginia is a single program laboratory supporting DOE's Science Strategic Goal and six of seven Strategic Plan goals of the Office of Science. TJNAF, operated as a Nuclear Physics user facility, provides worldwide unique capabilities for the study of hadronic physics, and maintains core competencies in nuclear physics and accelerator technologies to support not only its own research program, but broader Office of Science missions (e.g., Spallation Neutron Source (SNS)) as part of the national lab system, applying these technologies in the national interest (e.g., Free Electron Laser (FEL)). The TJNAF Business Plan describes planned activities for the Laboratory over the next five years that contribute to the DOE and Office of Science goals and objectives and advance our nation's position as a leader in the physical sciences. The Ten Year Site Plan (TYSP) is developed to support those mission-related activities described in the TJNAF Business Plan.

TJNAF is located on a 162.5 acre Federal reservation in Newport News, Va. The majority of the reservation, including three structures (97,000 SF), was transferred from NASA to DOE in 1987. Subsequently, DOE initially constructed 362,900 SF of new facilities, including the Continuous Electron Beam Accelerator and support facilities.

The most recent major construction project has been a 61,000 square foot addition to the CEBAF Center completed in January 2006. It provides greatly needed office and cafeteria space in addition to an expanded high power computer center and made possible to demolish 31,959 square feet (in FY05 & FY06) of high maintenance substandard trailer space. The TJNAF deferred maintenance backlog will be reduced by over \$3.2M as a result of completing this CEBAF Center addition.

The Replacement Plant Value of DOE owned buildings and real property trailers is \$101M. TJNAF will sustain a maintenance investment level of 2% of replacement plant value in FY06, FY07 and the out years. TJNAF's deferred maintenance backlog at the end of FY05 was \$9.6M, resulting in an ACI of 0.92 (adequate). A deferred maintenance reduction initiative was implemented in FY06 and will be continued in FY07 with funding of \$396,000. The FY07 GPP funding request is \$0.8M.

Actions Necessary to Arrive at a Safe, Healthy, Secure, "Preferred" Working Environment for TJNAF

TJNAF's recapitalization and modernization needs include: additional technical, experimental, and storage space; renovation of the Test Lab to improve safety and efficiency; updating of building equipment and code updates; and, new office space to consolidate staff and allow elimination of deteriorated trailers and shipping containers used for storage and termination of leased office space offsite.

In recent years GPP budget allocations have not been sufficient to address Lab infrastructure needs. The NP Program has typically allowed redirection of operating funds to GPP when needed to fund new facilities. Between \$2-3M of additional GPP funding is considered necessary to recapitalize the site facilities and make improvements to meet program requirements.

TJNAF Alternate Funding Requirements

In order to close the gap on inadequate space requirements, to keep pace with SC F&I plan goals and to meet future mission needs the Site's Alternate Investment plan, the Lab would be required to supplement SC-NP's GPP funding level with redirected operating funds a minimum of \$3M per year over the next 5 years. This is in addition to directed deferred maintenance reduction initiatives starting in FY07. To meet SC F&I goals, TJNAF will require an increase in overall funding levels to avoid an impact to the science mission. Funding from the Department of Defense and other agencies is being sought to provide the necessary facilities for growth of the Free Electron Laser (FEL) program.

B. Overview of Site F&I

Thomas Jefferson National Accelerator Facility (TJNAF) was built, managed and operated for over 10 years by the Southeastern Universities Research Association (SURA) for DOE's Office of Science. Facility operations began in 1995 with the completion of the Continuous Electron Beam Accelerator Facility (CEBAF), a unique international electron-beam user facility for the investigation of nuclear and nucleon structure based on the underlying quark structure. Effective 1 June 2006, the management and operations contractor will be Jefferson Science Associates, LLC (JSA). JSA is a partnership of the previous JLab operator Southeastern Universities Research Association Inc. (SURA) and Computer Sciences Corporation's (CSC) Applied Technology Division.

At the end of FY05 a total of 644 SURA (regular, part-time, casual, and student), 12 DOE, 11 State employees and 28 contract employees were employed at the site, occupying site facilities. Jefferson Lab serves a physics research user population of about 2,000 from the United States and numerous other nations. In FY05, an average of 340 users per month was provided on site support. In total, TJNAF has 456,679 SF of DOE-owned buildings and real property trailers with 76% of facilities less than 20 years old as shown in Figure B-1. TJNAF's AUI is 1 (excellent) and the deferred maintenance backlog is \$9.6M, resulting in an ACI of 0.92 (Adequate).

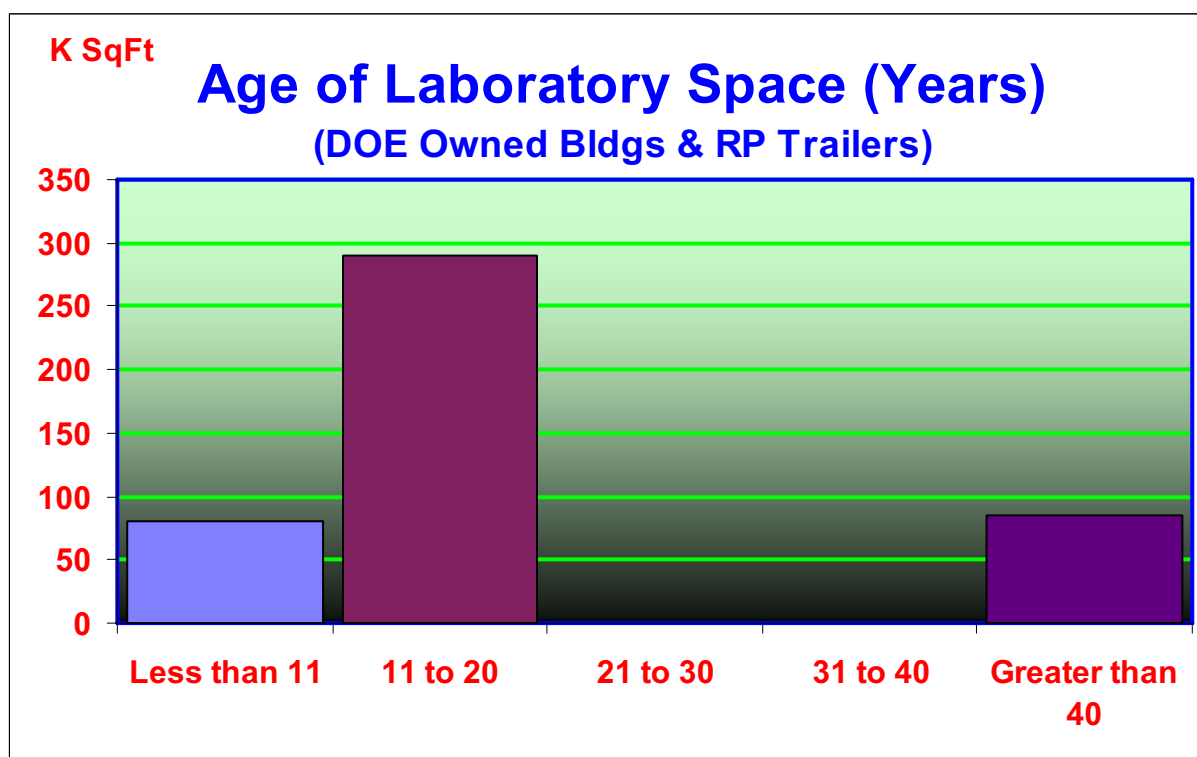


Figure B-1

The Thomas Jefferson National Accelerator Facility located in Newport News, Virginia covers 162.5 acres of DOE-owned land that was obtained from several former users/owners. One hundred ten acres were the site of the former Space Radiation Effects Laboratory (SREL) where a 600 million electron volt synchrocyclotron was operated by the National Aeronautics and Space Administration (NASA)

from 1964 to 1984. The SREL, associated parking, cooling towers, and small building annex occupied 10 acres of the total former site with the remaining 100 acres being heavily wooded and undeveloped. The existing building and land were transferred from NASA to DOE in 1987 with a reimbursement to the General Services Administration (GSA) in the amount of \$2.3 million which was funded by the City of Newport News, Virginia. The SREL building is currently called the Test Lab and is one of the largest buildings at TJNAF.

Adjacent and to the east of the former NASA property is an 83.65 acre parcel previously owned by the U.S. Department of Defense then U.S. Department of Education for which the City of Newport News reimbursed GSA \$1.498 million in 1982. The City of Newport News gifted 44.6 acres of this property to SURA in support of the contract between SURA and DOE. SURA sold the acreage to DOE for \$1 in January 1987. The City of Newport News then gifted another 51.5 acres to SURA in 1988. In 1993, 7.9 of these acres were transferred to DOE by SURA, a portion of which was a US Air Force BOMARC Missile Site that existed during the 1950's and was abandoned in the early 1960's.

SURA retained the remaining 43.6 acres, adjacent to the Jefferson Lab site, for a 42-room Residence Facility owned and operated by SURA and for future Lab-related activities. The SURA Residence Facility, built with funds from the City of Newport News is available for use by guests, visitors, users, and graduate students associated with the Lab. SURA is currently in the process of transferring about 7 of the 43.6 acres to DOE for construction of a fourth experimental hall in support of the 12 GeV CEBAF Upgrade Project.

North of the DOE-owned land is an 8 acre parcel referred to as the Virginia Associated Research Campus (VARC) which is owned by the Commonwealth of Virginia, is leased to SURA and sub-leased to DOE for use in support of Jefferson Lab. A total of 4.8 of these acres containing the VARC and Forestry buildings are subleased to DOE. Both the SURA and VARC property are included in overall site planning. The Existing Facilities Drawing (Appendix 1) illustrates the property line boundaries. Appendix 2 is an aerial photo.

A 31,176 SF Free Electron Laser (FEL) Facility was constructed on DOE land with funds provided by the Commonwealth of Virginia property and transferred to DOE in 1997. See Cover photo.

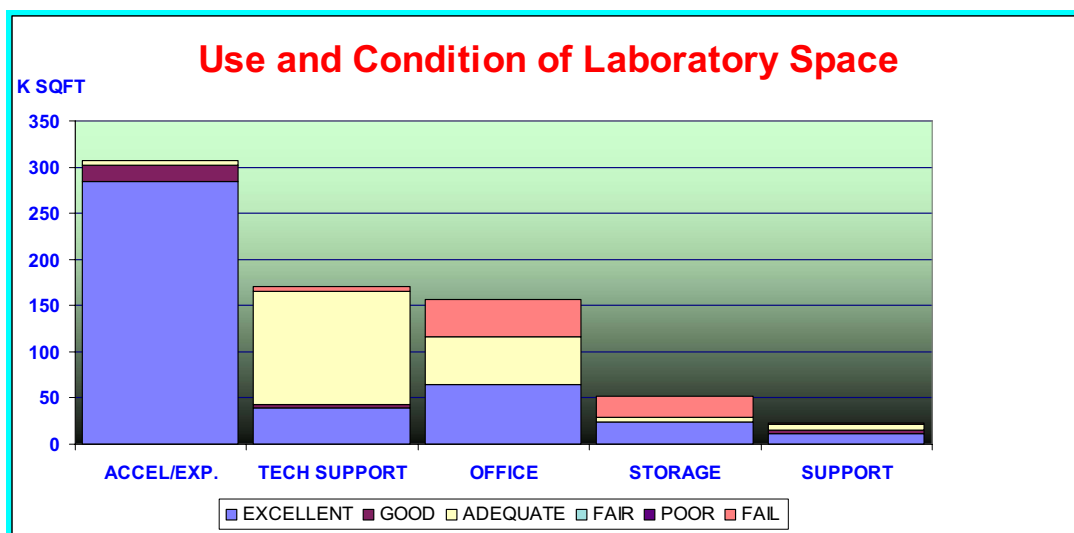
Jefferson Lab, as of 1 October 2005 consisted of 62 owned buildings, 2 state leased buildings, 44 real property trailers, and 10 other structures and facilities totaling 687,114 square feet (SF). Included are 48,543 square feet of real property trailers with an average age of 16 years that provide offices to approximately 150 employees and 250 users. A list of the facilities is in Appendix 4. In FY06 FIMS additions include the CEBAF Center Addition, a Fabric Storage Building, Lead Storage Building, and two Mobile Equipment Storage Buildings adding a total of 73,079 SF and removal of 30,772 SF of older real property trailers.

To the northwest, adjacent to Jefferson Lab, SURA leases 44,342 SF of office and lab space from the City of Newport News located in the Applied Research Center (ARC) (See upper left cover page). In addition to these facilities, Jefferson Lab has 75 personal property trailers (23,000 SF) used for storage and located on TJNAF property and 11,558 SF of off-site leased storage space. The total operating budget for the Lab in FY06 is \$89.9M. Lab space distribution by GSA Use Codes is shown in Table B-2:

Table B-2. Lab Space Distribution (Oct 2005)

GSA Use Code	Description	Owned – Gross SF				Leased – Gross SF	Total SF
		Building	Real Property Trailers	Personal Property Trailers	OSF Category 3000		
10	Administration	66,277	41,098			79,081	186,456
20	School		1,327				1,327
40	Storage	25,810	660	23,000		11,558	61,028
50	Industrial Bldgs	7,235					7,235
60	Service Bldgs	4,373	3,518			2,904	10,795
70	Research & Development	304,063	1,940		192,792		498,795
80	Other	378					378
Total		408,136	48,543	23,000	192,792	93,543	766,014

Figure B-3 shows the use and condition of laboratory space. The failed office and storage space is the result of real and personal property trailers and does not include the removal of 30,772 SF of office trailers in FY06 associated with the completion of CEBAF Center Addition.

**Figure B-3**

C. Current and Future Missions for the Site

Mission and Overview

Jefferson Lab contributes to DOE and Office of Science strategic goals by conducting forefront science, applying core competencies to advance science and national goals, producing annually one quarter of our nation's nuclear physics PhDs, and enhancing math and science education for our community. With an international user community of over 2,000 researchers, Jefferson Lab has

delivered scientific data for 110 experiments, resulting in more than 147 *Physics Letters* and *Physical Review Letters* published and 322 publications in other refereed journals. Collectively, more than 10,000 citations have resulted from work done at CEBAF.

Laboratory Focus and Vision

TJNAF has a central role in the field of nuclear physics, both in the U.S. and worldwide. TJNAF's present and future program relies on maintaining its role as the world leader in hadronic physics and superconducting accelerator technologies. These core competencies enable TJNAF to deliver its mission and customer focus, to perform a complementary role within the DOE laboratory system, and to attain its vision for scientific excellence and pre-eminence in the structure of nuclear building blocks, the underlying quark-gluon structure of the nucleus; and symmetry tests including the weak charge of the proton to test predictions of the Standard Model. In addition to Nuclear Physics, JLab contributes to enabling technologies and emerging fields – photon science and electron-light ion colliders – including advance radiofrequency superconductivity, 2K cryogenic engineering technology, photon science, advanced high power free electron lasers, energy recovering linacs (ERLs), and electron-light ion collisions at ultra-high luminosity.

Business Lines

Capabilities, aligned by business lines, shown in Table C-1 distinguish TJNAF and provide a basis for effective teaming and partnering with other DOE laboratories, universities, and private sector partners in pursuit of the laboratory mission. These business lines and the distinguishing capabilities outlined in the table below provide an additional window into the mission focus and unique contributions and strengths of TJNAF and its role within the Office of Science laboratory complex.

Table C-1. Business Lines and capabilities

Business Lines	Distinguishing Capabilities	Distinguishing Performance	Mission Relevance
Nuclear Physics – 6 GeV Research	<ul style="list-style-type: none"> Continuous beams of polarized high-energy electrons for studies of the quark structure of matter; State-of-the-art Equipment & Detectors; Continuous Electron Beam Accelerator Facility, Hall A, Hall B (CLAS), Hall C. 	<p>World-wide unique user facility for studies of nuclei and nucleons using the electromagnetic probe, with spatial resolutions from large nucleus to a fraction of a nucleon's diameter;</p> <p>Highest intensity in the world for highly polarized continuous electron beams with the energy and helicity correlated properties necessary to explore the details of nucleon structure;</p> <p>Detector and data acquisition capabilities coupled with these beams provide the highest luminosity capability in the world for these experiments.</p>	<p>Explore Nuclear Matter-from Quarks to Stars;</p> <p>Understand the structure of the nucleon and nucleonic matter.</p>
Nuclear Physics – Theory Center	<ul style="list-style-type: none"> High Performance Computing Effort in Lattice Quantum Chromodynamics (LQCD). 	<p>World-recognized theory group;</p> <p>Software development used worldwide (Chroma);</p> <p>First calculations of moments of GPD's.</p>	<p>Understand the structure of the nucleon and nucleonic matter;</p> <p>Deliver Computing for the Frontiers of Science.</p>

Business Lines	Distinguishing Capabilities	Distinguishing Performance	Mission Relevance
Superconducting Radio Frequency (SRF) and Related Accelerator Physics	<ul style="list-style-type: none"> • Experience building SRF for CEBAF & SNS; • Energy Recovery Techniques; • World-wide unique capability in 2K Cryogenic technology. 	<p>Large-grain Niobium operating at an accelerating field of 45 MV/m –world record achieved with minimal processing; Benchmarking exercise, concluded that JLab is a world leader par with DESY;</p> <p>World record in Energy Recovery Linac Technology demonstrated via operating a 1MW class electron beam with 10 mA current and 100 MeV energy with only tens of kilowatts of klystron power.</p>	<p>Understand the structure of the nucleon and nucleonic matter;</p> <p>Provide the Resource Foundations that Enable Great Science.</p>
Photon Science and Technology	<ul style="list-style-type: none"> • ERL-based Free Electron Laser; • Potential kW to MW class lasers; • Micromachining; • Infrared Free Electron Laser. 	<p>Unique assets of ultra-fast pulses with broad enableability at unprecedented power levels with continuous/high repetition rate operation;</p> <p>World record of 10 kW average power laser at infrared wavelengths with a few hundred femtosecond pulse length.</p>	<p>Provide the Resource Foundations that Enable Great Science.</p>

Major Activities

The following is a set of major activities that TJNAF would like to pursue to support aspects of the DOE mission and build on core strengths and capabilities of the laboratory. The Office of Science is examining all of these potential activities which are at different stages of development. Some are currently underway and some are mere concepts at this time. For those still in the conceptual phase, TJNAF has indicated significant interest and is viewed as having current supporting research and mission focus to pursue such activities. Budgets, as well as technical advice from its major scientific advisory committees will ultimately contribute to decisions about which activities are actually incorporated into JLab's scope of work. The DOE's Five Year Plans provide greater insights into these activities in terms of various five-year budget scenarios.

The major activities in Nuclear Physics are:

1. 6 GeV Experimental program: Exciting opportunities to add to our understanding of the quark structure of matter will be supported with several major installation experiments.

2. 12 GeV CEBAF Upgrade: Upgrade CEBAF, a unique research facility and world leader in hadronic physics. The scope of the proposed project includes doubling the accelerator beam energy, adding a new experimental Hall (D) and associated beamline, and upgrading the equipment in existing experimental Halls. The Upgrade is a near-term priority in the Office of Science Facilities for the Future of Science plan and will allow experimental study of the confinement of quarks and address the question, "why are quarks never found alone?" Confinement is a remarkable and not understood feature of quantum chromodynamics. The only planned or existing facility that can test this prediction is the 12 GeV CEBAF.

3. Excited Baryon Analysis Center: TJNAF's world-recognized theory group provides a critical foundation for its experimental program. The Excited Baryon Analysis Center allows enhanced analysis and understanding of experimental results to help lead to a profound understanding of the spectrum of excited baryons and hence the nature of confinement, including the way excited

hadronic matter modifies the nonperturbative QCD vacuum. The Office of Science's Strategic Plan for Nuclear Science states that connecting the observed properties of baryons with the underlying framework provided by QCD is one of the central challenges of modern science and a proposal to establish an Excited Baryon Analysis Center was submitted to DOE that would build a network of all relevant theoretical and experimental groups world-wide to agree on a coherent program of data analysis and to develop new theoretical tools.

4. Lattice Quantum Chromodynamics (LQCD) Computing: Expand existing High Performance Computing Effort in Lattice Quantum Chromodynamics (LQCD) is essential to understand QCD in the confinement regime and contribute to national scientific computing enterprise. Success will mean that TJNAF has calculated the consequences of nonperturbative QCD with unprecedented accuracy in order to test its predictions against the precise new data provided by the 12 GeV CEBAF Upgrade. Funded under the auspices of the Department of Energy's SciDAC activity, the US theory community has developed the computational infrastructure to employ lattice QCD to solve a spectrum of problems in nuclear and particle physics with TJNAF playing a pivotal role.

5. International Linear Collider (ILC) R&D: Develop enabling technologies in support of International Linear Collider (ILC). Since the announcement in 2004 of the technology choice for the ILC, TJNAF has been actively engaged in preliminary discussions on the ILC project and as a member of numerous ILC Working Groups including a recent formal role in the ILC Global Design Group and in MOUs with the principal ILC coordinating lab in the US, FNAL. TJNAF experience and expertise in Superconducting Radiofrequency (SRF) technology will not only enable future scientific accelerators (ILC, etc.), but accelerators for basic science, defense, bioscience and nano-technology, and potential commercial materials processing (Free Electron Laser).

6. Free Electron Laser (FEL): Free-electron lasers being developed at Jefferson Lab in Newport News, Virginia, will offer a wide spectrum of applications in manufacturing and in applied and basic science. Jefferson Lab operates a kilowatt-class high average-power, sub-picosecond free-electron laser, covering the mid-infrared spectral region based on an energy recovered linac. Supporting, participating in, and planning to profit from the Jefferson Lab Free-Electron Laser Program are the member institutions of the growing Laser Processing Consortium, a growing partnership of high-technology manufacturers, start-up companies, research universities, government, the Commonwealth of Virginia and the U.S. Navy. In the structure and dynamics of materials, the JLab FEL User Facility offers research opportunities extending far outside the confined spectral regions available elsewhere, both in photon energy and electric field.

The funding and staffing levels shown in Table C-2 depict an overall growth at Jefferson Lab consistent with activities and initiatives outlined in the Business Plan. The projects described in the TYSP provide the necessary facilities and infrastructure for the research programs detailed in the Business Plan. It is expected that all current facilities will be fully utilized in their current configuration, modified for reuse as indicated by the identified projects, or removed from the site.

Table C-2 Summary of Expected Program Funding and Staffing (\$M) (excluding construction)

	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
Funding:													
SC – BES													
SC – HEP	.1	.4	2.5	1.0	1.0	2.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0
SC – BER	.8	.4	.4	.4	.4	.4	.5	.5	.5	.5	.5	.6	.6
SC – NP	86.8	77.9	89.4	100.5	100.9	103.9	103.8	116.4	120.4	124.6	129.0	133.5	138.2
SC – ASCR													
SC – Fusion													
SC – WDTS	.3	.3	.5	.5	.5	.6	.6	.6	.7	.7	.7	.8	.8
SC – S&S	1.5	1.1	1.3	2.4	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.8	2.9
Total SC	89.5	80.1	94.1	104.8	104.8	109.5	108.2	120.9	125.2	129.5	134.1	139.0	143.8
Other DOE	1.1	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5
Work for Others	9.1	9.3	11.5	11.5	11.5	121.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
Total \$:	99.7	89.9	106.1	116.8	116.8	122.6	120.2	132.9	137.2	141.5	146.1	151.0	155.8
Total Staffing: ((FTE's)	635	620	687	764	795	839	811	798	738	702	702	702	702

Assumptions:

- 1) SC- NP Inflation assumption is 3.5% per year starting in FY13 (FY07 through FY12 based on 5-year Budget Presentation to the Office of Nuclear Physics)
- 2) All construction funding (including 12 GeV CEBAF Upgrade construction and Test Lab Rehab) is not included in table above. Staffing includes 12 GeV CEBAF Upgrade construction based on February 2006 funding profile.
- 3) State funding and staffing not included
- 4) \$343K of Small Business contracts removed from the JLab budget in FY06
- 5) Safeguards and Security Budget at requirements starting in FY08
- 6) Assumed GPP funding: FY07 \$800K; FY08 \$800K; FY09 \$1.2M; FY10 \$1.2M; FY11 \$1.2M; FY12 \$1.2M; FY13 \$1.26M; FY14 \$1.32M; FY15 \$1.39M; FY16 \$1.46M; FY17 \$1.53M

Planned Research Program Funded Projects

12 GeV CEBAF Upgrade: Project scope includes doubling CEBAF's beam energy, construction of a new experimental hall (Hall D) including experimental equipment and associated beam line and Hall D Counting House, and upgrades to the experimental equipment in the existing three experimental Halls. The conventional facilities for the 12 GeV CEBAF Upgrade is needed to meet three requirements: (1) 12 GeV accelerator operations, (2) approximately double the central helium liquefier capacity (CHL #2), and (3) provide housing and utilities for GlueX experimental equipment.

The conventional facilities needed to support the 12 GeV accelerator operations are primarily utility upgrades of low conductivity water (LCW) and power. The LCW system will be expanded to provide cooling for additional magnets, increased heat load in existing magnets, additional RF zones, and additional power supplies. New electrical substations will be installed to meet the additional power requirements of 12 GeV accelerator operations. To support these utility system upgrades, additions to three existing accelerator service buildings are required to house new LCW equipment and DC power supplies – about 3,900 square feet (SF) total.

The existing Central Helium Liquefier (CHL) Building will be expanded by about 4,800 SF to house additional compressors, the industrial cooling water (ICW) and upgraded power. A new cooling tower, 4-450 ton cells, will be installed. Two new 5 MVA unit substations will be installed. No additional parking will be provided.

A new experimental hall (Hall D) will be provided for GlueX. The complex will consist of an experimental hall, a counting house, beam dumps, cryogenics plant, and service buildings – about 13,500 SF. The site is located at the northeast end of the existing accelerator tunnel and includes an extension of the tunnel, approximately 4,500 SF, to house the new beam transport line and tagger magnet. Required utility connections and extension of existing distribution systems include domestic water, sanitary sewer, electricity, and telecommunications. New utilities and distribution lines are required for LCW, chilled water, and fire protection. A new electrical service will be provided to the Hall D Complex via a new unit substation with primary feeders from an existing electrical manhole on the Accelerator Site. Incidental parking will be adjacent to the new buildings.

The 12 GeV CEBAF Upgrade has a planned increase of 26,700 SF to the Jefferson Lab conventional facilities and the associated Replacement Plant Value (RPV) is approximately \$30 million. Over 50% of this RPV is associated with utility distribution systems, site work, and other structures. No existing facilities will be demolished as part of the project. Jefferson Lab currently has enough space banked to offset 12 GeV CEBAF Upgrade planned construction. Based on the February 2006 funding guidance, it was estimated that new facilities would be added into FIMS in the FY12 timeframe. Recently, Jefferson Lab received new funding information on the 12 GeV CEBAF Upgrade project that stretches and levels the funding profile. The 12 GeV CEBAF Upgrade Project Plan will be updated over the next several months.

12 GeV operations will have a minimal impact to Jefferson Lab's long term staffing. Office space for the new Hall D staff was included in the recently completed CEBAF Center Addition. User space is included in the new Hall D Counting House. Jefferson Lab's temporary staff will increase during 12 GeV CEBAF Upgrade's peak construction years. Concepts have been developed to accommodate temporary fluctuations in on-site staff. These concepts will be refined once more is known about funding and the timing of the Accelerator and Hall shutdown schedule.

D. Facilities and Infrastructure (F&I)

D.1. Vision, Goals, and Strategy (VGS)

Vision

Jefferson Lab's vision for Facilities and Infrastructure is to provide functional and cost effective facilities to support the assigned mission. DOE Guidance for the management of facilities and infrastructure is:

- Maintain a Maintenance Investment Index (MII) of at least 2%
- Maintain an Asset Condition Index (ACI) of at least 0.95
- Eliminate excess facilities
- Meet Energy savings goals mandated by the Energy Act of 2005
- Develop and propose an alternate investment strategy for obtaining needed facilities

Goals

The Facilities and Infrastructure goals are

- Provide a safe, healthy, secure, "preferred" working environment for laboratory employees and visitors. Keep current with technological changes as they support the mission.
- Maintain existing facilities sufficiently to ensure building functionality and make alterations to realize energy and cost savings as well as operational efficiency.
- Provide office and technical space corresponding to manpower projections. Eliminate, to the extent possible the use of trailers for office space.
- Design facilities readily adaptable to changing research requirements and technologies.
- Collocate work groups to the extent possible to enhance effectiveness.
- Eliminate substandard storage space and structures that have reached the end of their useful lives.
- Eliminate leases that do not lead to building ownership and minimize off-site leases.

A gap analysis was conducted to determine whether the type and quality of current space and equipment are adequate to support mission needs and provide a working environment that is safe, healthy, and secure. Shortfalls of our current facilities have been identified and are categorized below:

Inadequate work space: Currently staff is working out of accelerator service buildings and aging trailers with many of the groups not collocated, or not located near their work. These problems can be traced back to shortages of this type of space since original construction. The

situation continually worsens due to the deteriorating condition of the trailers which were intended to be a temporary space as well as an increase in staffing and evolution of the accelerator over the past several years. The trailers could be replaced, but due to cost, it is not a wise life cycle investment to use trailers to satisfy a steady state requirement. The service buildings were not designed for occupancy and therefore do not meet the goal of “preferred” working environment. In addition, some of the people currently located in service buildings will have to be relocated since those buildings will be used for equipment as originally intended, for the 12 GeV CEBAF Upgrade. The size of this problem is in the range of 22,000 to 27,000 SF.

Additional experimental setup space. Due to the overwhelming success of CEBAF and increased experimental capabilities, there remains a large experimental backlog consisting of increasingly more complex setups, some taking up to six months to stage. Jefferson Lab lacks sufficient staging space to accommodate these setups. To make the best use of “machine” time, these setups occur outside the experimental halls thus minimizing transition time between experiments. In addition many of the experiments are scheduled for hall time in separate segments, which sometimes requires the setup to be removed from the hall and stored and/or modified before the next scheduled segment. An additional 6,000 SF of high bay space would allow the Lab to increase experiment scheduling efficiency. High bays proposed as part of the two technical support buildings as well as backfilling of existing space, vacated as a result of this construction, will fulfill this need.

Storage. Jefferson Lab currently has two off-site warehouses, one on-site storage building, and nearly 22,000 SF in 70 shipping containers used for storage. Experimental equipment is typically shipped (domestic and international) to the Lab by the research-sponsoring institution for assembly. The components are collected and then moved to an experimental setup area for assembly. At the conclusion of the experiment, devices are stored for future use, disassembled and stored for return shipment to the sponsoring labs or institutions, or excessed. Off-site storage isn’t practical because of the size of the material and the relative cost to transport the material repeatedly over public roads. Steady state storage requirements should be met using onsite facilities with surge requirements being met with temporary on-site structures or off-site leases. Both steady state (about 20,000 SF) and surge (about 10,000 SF) storage needs exist.

Utilities & Infrastructure. The roadway and utility systems have been essentially unchanged since completion of the initial construction in 1992. Site utilities drawings are shown in Appendix 5. With the increase of personnel at the site, there is a need for additional roadways to improve the safety and efficiency of internal vehicular movement. This is particularly important during periods of heightened security. Currently during these periods, vehicles have to go out one security checkpoint and enter a second to transit from one side of the campus to the other. Minimal sidewalks were part of the original construction, leaving individuals to walk on the major streets at the Lab to get from the campus to the accelerator site buildings. Visitor parking is inadequate to serve the many conferences and meetings held at the Lab.

Any excess capacity in the low conductivity and cooling water system built during the original 4 GeV construction has been utilized for the current 6 GeV state to the extent that there are shortages in several areas. In addition, the lack of sufficient emergency electrical power during Hurricane Isabel in September 2003 caused a loss of all liquid helium, which allowed the accelerator to warm up. This event caused a 5-week delay in the experimental program. NP has funded installation of an emergency generator that will protect the critical systems for power outages up to 36 hours with a future (Phase 2) project identified allowing connection of 10 MW of mobile generators for extended operation of the CHL facility.

At least two times during the past five years the backup of stormwater on the property has been a problem. A stormwater study was completed in 2003 that identified numerous maintenance and improvement projects to sustain future development. Regulations require there not be an increase in the quantity of stormwater leaving the site as a result of new construction. Maintenance projects include cleaning of channels will be accomplished with indirect maintenance funds. Future improvements include the widening of channels and installation of two more stormwater retention ponds. These improvements will be accomplished under the GPP projects identified in Appendix 10 and represent a required investment of \$1.6M. The first stormwater retention pond was completed in 2005 to support current construction including CEBAF Center Addition Phase I.

Education/Visitor Space. Jefferson Lab has from its beginning had a strong tie with the community. This is largely due to the education program the Lab delivers to primary, middle and secondary school students. DOE's strong commitment to science education is expected to keep our programs at the forefront of the labs general efforts. If additional funding becomes available for these programs, additional facilities will be required. In addition, the Lab currently does not have facilities to make permanent science displays available to the general public or a central location to receive visitors.

Physical Security. Physical Security options for controlling access include both a decentralized and centralized approach. Currently, the decentralized option controlling access at the building or area level is being utilized. The centralized option would include a manned gatehouse at the site entrance and a site perimeter fence. Both options are actively being weighed in light of local resource protection needs, practical considerations in implementing the new DOE Foreign Visits and Assignments Order, and the prevailing national security level. Facility changes have been programmed to reduce security manpower operating costs during periods of heightened security. The Lab currently lacks a single entry point due to roadway configuration. Proposed future projects identified in Appendix 10 will add a main entrance gate, provide for traffic flow improvements, construct a new shipping/receiving facility at the perimeter of the site, and install a perimeter fence. Manned checkpoints will be utilized for tractor trailer trucks until the future projects are complete.

Other/New programs. Experience with SNS and Renaissance cryomodule research and development has shown that the existing infrastructure is not configured to minimize the risk of contamination during production, the leading cause of poor cavity performance. During SNS production less than a 50% pass rate achieved on the first test due to contamination problems, with a specification of 16 MV/m, requiring a lot of re-work and re-testing. Most cavities passed on the second or third processing cycle. Modest upgrades, particularly in the area of

process controls, are expected to be adequate to support the performance needs of the 12 GeV CEBAF Upgrade and RIA projects. For the International Linear Collider the requirement is >90% pass rate on the first test at more than double the gradient. This will require improved clean room facilities, work flow, water systems and processing methods.

Strategy

The Lab's infrastructure strategy is discussed below for staffing in general and for each major business line. Timing of construction is tied directly to final budgets.

General approach to staff levels

Under a +3.5% budget scenario, Table C-2, there is a long term staff increase of about 67 personnel between FY09 and FY17 from FY05 levels. The Alternate Investment Plan (D.11) provides the most efficient effective means of accommodating this long term growth. If that is not possible other less efficient and effective means will be utilized. Variations during this period will be handled within existing space by varying space standards and assignment of space. Additional off site leases or delay in disposal of trailers being replaced by more permanent structures will be used to accommodate staff levels above this budget scenario as required. Delays in funding identified projects will lead to retention of existing trailers at the end of their life cycle and/or obtaining additional trailers costing about the same per square foot cost as more permanent structures.

Continuation of the 6 GeV program

Provide Adequate Work Space

First priority is to provide adequate technical space for those currently in service buildings and collocate some technical groups currently dispersed both on and off site. This will be provided through the construction of Technical Support Building Phase 1 funded using a combination of within target and redirected GPP funds. Construction of CEBAF Center Wing D will replace aging trailers around the Test Lab as well as offices currently in the Test Lab High Bay. Construction of Technical Support Building Phase 2 and 3 will allow demolition of the remaining aging trailers and collocation of engineering staff from multiple areas. The completion of these four projects will reduce the value of deferred maintenance by \$1.7M.

Additional experimental setup space

Construction of Technical Support Building Phase 1 provides a high bay height to accommodate cryomodule fabrication currently in Building 98, making their previous space available for experimental setup. Experimental setup space will also be available in the high bay of Technical Support Building Phase 2. Safety and utility of the Test Lab will be improved as a result of completing the Test Lab Rehab project with additional experimental setup space made available in the Test Lab high bay upon completion of the SRF Annex.

Storage

The current effort is to reduce the overall storage requirement by excessing material not identified for use in specific future projects. Currently DOE prohibits recycling of material ever having been in an accelerator tunnel or experimental halls whether or not

the material is activated. Until clear guidance is issued to quantify when materials are not considered activated, potential cash value must be treated as a liability. Existing storage areas in the EEL Mezzanine and Physics Storage Building will be reconfigured to increase capacity and be centrally managed.

Areas for storage of critical spares are incorporated into Technical Support Buildings 1 and 2 in FY07 and FY10 respectively. A RADCON storage building for segregation and processing of shipments for disposal of activated materials plus two general storage buildings is planned for FY09. A new shipping & receiving building at the site perimeter planned for FY10-FY11 will include general storage.

Utilities and Infrastructure

Electrical Systems – The primary cable and switch gear serving the Test Lab, in place since 1965 is scheduled for replacement in FY08 as part of the deferred maintenance reduction program. Closely coordinated with this work will be the upgrading of the Dominion Virginia Power (DVP) transformer serving the campus portion of the site. The underground primary and secondary electrical distribution for the accelerator site is near its expected life expectancy. Replacement is scheduled for FY11. Adequate emergency generator and switching capacity exists to maintain critical systems during partial site outages or outages less than two days. Additional capacity is required to maintain the CHL during extended outages to prevent the accelerator from warming up. JLab has been in discussions with DVP to provide the capability to connect 10 MW of leased generators during the extended outage period. Financing cost for this capability is shown in Appendix 10.

Industrial cooling systems – Cooling towers are nearing or past their life expectancy. Projects are identified over the next 6 years to replace these aging cooling towers.

Major Heating, Ventilating, and Air Conditioning (HVAC) Systems – HVAC systems in four major buildings have passed their life expectancy, shown high wear and maintenance requirements, or the system installed is no longer efficient for the space it serves. Projects are identified in Appendix 10 over the next six years to replace these HVAC systems.

Low Conductivity Water (LCW) System Controls – Controls for the LCW system need to be replaced due to obsolescence. Maintenance replacement parts are becoming more difficult to obtain. A project is identified in Appendix 10 over the next five years to replace LCW System Controls.

Roads, Sidewalks and Parking – The original site was constructed with minimal sidewalks and no clear separation of vehicular and pedestrian circulation. Additional sidewalks have been funded in FY06 to alleviate some of the higher interface areas. Additional roadways are planned to provide improved vehicular traffic flow and eliminate head-in parking along major roadways. Additional parking is planned to accommodate conferences and planned additional staffing.

Stormwater Management – A minimum of two additional stormwater management ponds and drainage channel improvements are planned to accommodate planned construction. The State of Virginia Department of Environmental Quality and City of Newport News design guidance, enacting the Chesapeake Bay Act, the amount of water leaving the site as a result of any construction is not to increase.

Security

Site Access Control – The site currently has a proprietary system that integrates access control and fire alarm systems. While innovative and cost effective when the system was installed, industry has chosen to keep the two systems separate making software updates difficult and time consuming to obtain. In addition, requirements have been standardized and equipment capabilities expanded over the last several years. A new separate access control system needs to be obtained. The majority of installed door hardware should be compatible with the new system. A project is identified in Appendix 10 to install a separate access control system during the next two years.

Site Wide Emergency Notification – Weather and other emergency events during the past few years have revealed a need to upgrade the Site Wide Information System (SWIS) to include real-time emergency weather updates and populate the system to the "entire" site, not just certain buildings. In addition we are investigating a site wide emergency notification system. Estimates indicate the cost are below the capital funds threshold and will be purchased with indirect operating funds in the next two years.

Main Entrance Gate – The Site lacks a single entrance for vehicular access. During business hours there are currently four entrances to the Site. While gates are closed at three of these entrances after hours, the main entrance splits into two roads and lacks any entrance facility for security staff. This situation is complicated during periods of increased security when the identification is checked for all entering personnel. Installation of a gatehouse at the main entrance along with installation of a south connector road will provide the Site with a single manned entrance. A project is identified for FY16 in Appendix 10 to install a main entrance gate.

Perimeter Fence – While the Accelerator is enclosed with a fence for safety purposes there is not currently any DOE requirement for fencing that encloses the entire site. In addition, the VARC building on State of Virginia property and Applied Research Center on City of Newport News property are effectively treated as an extension of the DOE site. The entire site has the setting of a university or business campus in an urban setting with housing and businesses on all four sides of the complex. These factors make it very difficult to tightly control non-vehicle access other than for the Accelerator site. A fence boundary has been identified and included in Appendix 10 in the event the security condition for the Lab is raised on a permanent basis or vandalism becomes a problem. The addition of perimeter fencing under these conditions would offer a lower overall security operating cost.

Continued SRF work for others

Test Lab Rehab – Present technical infrastructure systems – including clean rooms – represent historical compromises that do not efficiently support the performance quality now required of

accelerator cryomodule designs. The Test Lab Rehab project scope includes the upgrade these systems, replacement of the 40+ year old electrical and mechanical systems, correct building code compliance items including resolution of mixed occupancy use issues, and improvements in the overall effective use of space to support the SRF program. The completion of this project will reduce the value of deferred maintenance by \$1.5M.

Superconducting Radio Frequency (SRF) Annex – The SRF program includes research & development as well as production of new and refurbishment of existing cryomodules. Additional room is needed to increase process layout which is expected to result in increased efficiency and improved safety. Construction of a SRF Annex will satisfy these needs.

CEBAF upgrade to 12 GeV

All of the conventional facilities required for construction and operation of CEBAF at 12 GeV are included as part of the 12 GeV CEBAF Upgrade project. The conventional construction includes 26,700 SF of new space including an extension to the tunnel and a fourth experimental hall. Any additional temporary staff will be accommodated in existing space or trailers scheduled for removal may be held for an additional period of time. See discussion under Section C for more detail.

Continued growth of the LQCD program

TJNAF is currently part of a multi-lab SciDAC sponsored LQCD program that utilizes computer clusters to run numerical simulations of Quantum Chromodynamics (QCD) in a space-time lattice. Recently announced allocations provide significant additional computing clusters at JLab to be coupled to the JLab experimental program. Computing space is available however additional uninterruptible power and cooling will be required to support the anticipated additional 1 MW load. Projects are included in Appendix 6 to meet these requirements.

Continued growth of the FEL program

FELs based on Jefferson Lab's superconducting electron-accelerating technology are being developed to process plastics, synthetic fibers, advanced materials, and metals as well as components for electronics, microtechnology, and nanotechnology. Prospective products include durable yet attractive polymer fabrics for clothing and carpeting; cheap, easily recyclable beverage and food packaging; corrosion-resistant metals with increased toughness; mechanical and optical components with precisely micromachined features; microcircuitry; and electronics for use in harsh conditions. The FEL presents unprecedented opportunities for studies of material behavior, from protein folding and protein specific function (photosynthesis, metabolic pathways) to complex materials; non-Fermi metals, superconductors, and semiconductors. The source enables studies of chemical reaction dynamics and energy partition and flow and has application in condensed matter physics, biology, and chemistry. On July 21, 2004 10 kilowatts of continuous wave operation was achieved. Extensions of the FEL to 250 nanometer in the ultraviolet light range are planned.

An addition to the existing facility as well as a stand alone FEL off site are planned with construction funding being provided from non-DOE sources.

D.2 Process for Identifying F&I Needs and Development of Plans to Meet the VGS

The process for identifying the lab's facility and infrastructure needs is continuous and includes elements such as facility condition assessments, facility work prioritization meetings, safety inspections and reviews, customer requested work, space utilization reviews, and facility maintenance along with DOE strategic plans, budgets and guidance. Facility condition assessments are currently conducted on a three year schedule by a cross functional team consisting of engineers, environmental health & safety staff, as well as representatives for the occupants. Final reports are available electronically to JLab staff on the web. Customer representatives meet quarterly with Facilities Management to review and prioritize facilities requests and identify new work items or any space requirements. Safety related items are managed through a Corrective Action Tracking System (CATS) identifying facilities related issues. A work management system tracks all facility related requests. An Infrastructure Committee meets regularly to review priorities and resolve infrastructure work or space issues, reporting progress to Key Management.

At least once per year Facilities Management meets with the Lab Director, Chief Operating Officer and Key Management to identify high level facility needs to meet the current mission as well as long term mission changes. Follow-up discussions are then held with middle managers to define short term requirements for current missions and planned changes. Options for closing any gaps are presented and discussed. This data is outlined in terms of scope and cost and distributed for review and prioritization. The prioritized project list, FY08 Integrated Facilities and Infrastructure (IFI) Crosscut Budget Submission (Appendix 6), is then presented to the Lab Director and Key Management for approval.

The deferred maintenance list is reviewed to verify alignment with DOE definitions for Deferred Maintenance and Rehab and Improvement Cost (RIC). Projects are prioritized based on their impact to the mission.

The Ten Year Site Plan is updated per the latest provided guidance and coordinated with the Thomas Jefferson Site Office and the Office of Science prior to being submitted for approval.

D.3 Land Use Plans

As suggested in the DOE guidance the Land Use Plan for TJNAF has been rolled up into this Ten Year Site Plan (TYSP). In order to save time and effort and to facilitate the approval process, the land use plan will continue to be a part of the TYSP annual update. The Jefferson Lab Master Plan (Appendix 3) provides a 10-Year vision of land use at TJNAF. It has not materially changed since last year.

D.4 Excess Real Property

All real property currently held by TJNAF is fully utilized with the exception of the Block House Structure. This asset is a four wall structure comprised of activated shielding blocks that has been used to store activated material awaiting disposal. It is envisioned that this structure will be dismantled with a portion of the shielding blocks being used for the planned Hall D shielding and the remainder disposed of in a landfill or reused at other sites. Additional details are provided in Appendix 8 and 9.

D.5 Long Term Stewardship

There are currently no Long Term Stewardship Activities at Jefferson Lab.

D.6 Replacement Plant Value (RPV) Estimates

The RPV estimate in Table D-1 for FY08 budget submission is based on the RPV value in FIMS at the end of FY05 (Column A). The RPV for the following years are escalated 2.3%. The construction estimate for facilities completed during the fiscal year less the FIMS RPV value for any facility eliminated during the FY (in this case FY08) are added to the beginning RPV. Additions and eliminations are based on construction projects identified in Appendix 6: FY08 Integrated Facilities and Infrastructure (IFI) Crosscut Budget Submission.

Table D-1 Replacement Plant Value Estimates

	Column A	Column B Estimated Additions/ Eliminations during FY:	Total Estimated RPV (sum of columns A & B)
FY08	\$120,171,142	\$7,902,755	\$128,073,897
FY09	\$130,837,833	\$860,000	\$131,697,833
FY10	\$133,847,964	\$0	\$133,847,964
FY11	\$136,926,467	\$0	\$136,926,467
FY12	\$140,075,775	\$59,944	\$140,135,719
FY13	\$143,357,462	\$10,367,136	\$153,724,598
FY14	\$157,021,820	\$21,586,000	\$178,607,820
FY15	\$182,219,322	\$0	\$182,219,322
FY16	\$186,410,366	\$0	\$186,410,366
FY17	\$190,697,805	\$4,258,181	\$194,955,986

D.7 Maintenance

The below table indicated the planned annual facilities maintenance funding level to meet the SC 2% MII goal as well as no additional maintenance being deferred.

Table D-2 Lab's Site Maintenance Funding Plan

	SC Goal	Site Maintenance Funding Plan	Explanation if Funding Plan does not meet goal or results in deferred maintenance
FY08	\$2,403,423	\$3,050,000	N/A
FY09	\$2,616,757	\$3,100,000	N/A
FY10	\$2,676,959	\$3,200,000	N/A
FY11	\$2,738,529	\$3,400,000	N/A
FY12	\$2,801,516	\$3,700,000	N/A
FY13	\$2,867,149	\$3,800,000	N/A
FY14	\$3,140,436	\$4,000,000	N/A
FY15	\$3,644,386	\$4,300,000	N/A
FY16	\$3,728,207	\$4,400,000	N/A
FY17	\$3,813,956	\$4,500,000	N/A

Refer to the FY08 IFI Crosscut (Appendix 6) for a list of major repairs and "replacements in kind" projects planned for FY07 and FY08 costing \$100,000 or more.

D.8 Deferred Maintenance Reduction (DMR)

TJNAF's deferred maintenance backlog at the end of FY05 was \$9.6M, resulting in an ACI of 0.92 (adequate). This deferred maintenance is broken down by the following asset types:

- DOE Owned Buildings \$3.1M
- Real Property Trailers \$4.9M
- Other Structures \$1.6M
- \$9.6M

Completion of the CEBAF Center Addition project in FY06 made it possible to demolish 31,959 square feet of trailer space and reduce the Lab's deferred maintenance backlog by over \$3.2M. This along with other deferred maintenance reductions in FY06 along with the increase in the RPV is expected to raise the ACI to about 0.95. Table D-3 indicates the minimum deferred maintenance reduction funding for the Lab per the guidance based on the funding levels described under Appendix 6. The ACI will increase sooner using the Alternate Investment Plan funding profile. It is expected that the ACI value will be above 0.95 by the end of FY08 and therefore TJNAF will no longer be required to spend at the minimum maintenance reduction funding level.

Table D-3 Estimated DM and ACI Based on Site DMR and Other* Funding

	SC DMR Funding Goal	Site DMR Funding Plan	Estimate of DM at end of Fiscal Year	Estimated ACI
FY05	NA	NA	\$9,591,177	0.92
FY06	NA	SLI	\$6,728,452	0.95
FY07	\$398,000	\$400,000	\$6,711,342	0.95
FY08	\$720,000	\$720,000	\$6,129,143	0.95
FY09	\$1,050,000 **		\$6,270,114	0.95
FY10	\$1,380,000 **	\$392,000	\$6,414,326	0.95
FY11	\$1,380,000 **	\$1,538,000	\$6,152,656	0.96
FY12	None	NA	\$4,720,793	0.97
FY13	None	NA	\$4,829,371	0.97
FY14	None	\$515,000	\$4,940,447	0.97
FY15	None	NA	\$4,528,255	0.98
FY16	None	\$520,000	\$4,632,405	0.98
FY17	None	NA	\$4,208,013	0.98

*Other – includes portions of GPP, line items and EFD projects that may result in some DM reduction

** Specific DMR projects are not planned for these years because the highest priority portion of our remaining DM is in aging trailers that will be replaced by other capital projects.

The Lab believes it is a good management practice to maintain some deferred maintenance backlog equal to about 2% of the Lab's RPV to force a prioritization of maintenance work to promote good use of funds and to act as a "flywheel" to absorb unused annual corrective maintenance budget.

The majority of the deferred maintenance is the result of aging real property trailers. This Plan proposes to replace all current real property trailers with permanent structures and use real property trailers in the future only to accommodate temporary requirements. The remaining trailers will be eliminated after the completion of the following proposed projects listed in Appendix 10. The first two projects also appear in Appendix 6.

Proposed Project	SF Trailers Eliminated	Deferred Maintenance Reduction
Technical Support Building Ph 1	4,700	\$488,000
CEBAF Center Wing D	5,000	\$520,000
Technical Support Building Ph 2	3,700	\$392,000
Technical Support Building Ph 3	3,500	\$371,000

In addition to the deferred maintenance reduction projects shown in Table D-4 for FY07 and FY08, the below listed planned projects will further reduce deferred maintenance

Proposed Project	SF Space Eliminated	Deferred Maintenance Reduction
Test Lab Rehab (FY10-11 SLI funded)		\$1,538,000
SRF Annex	3,680	\$16,000

Table D-4 Planned Deferred Maintenance Reduction Projects

	FY07 (\$000)	FY08 (\$000)
Test Lab Primary Electrical	345	115
CEBAF Auditorium Lighting & Sound System	31	
Waste Oil Storage Shed	20	
CHL Cooling Water Piping		100
CHL Overhead Bridge Crane		20
Test Lab Exterior Finish		170
Test Lab Exterior Lights		15
Storm Drainage Maintenance & Repair		140
Accelerator Service Buildings & CHL Siding Repair		60
Road Repair & Maintenance		100
Totals	396	720

D.9 Recapitalization & Modernization

D.9.a IGPP (Multi-program Labs)

The IGPP Program is currently not available to TJNAF since it is a single program lab.

D.9.b Line Items

Below is a general discussion of the Prioritized List of Line Item Projects found in Appendix 7.

Test Lab Rehab. The Test Lab was constructed in 1965 by NASA and was transferred to DOE in 1987 with 110 acres. The building had been in caretaker status by NASA for a number of years prior to transfer. One of Jefferson Lab's largest facilities and houses approximately 75 staff for the Lab's SRF operations. With the initial construction of Jefferson Lab and then SNS cryomodule construction, operations have been set up around existing building features such as the Test Cave and are not efficient or flexible. The high bay area has three levels of mezzanines with a mix of functions including offices, labs, and storage. This limits the use of the crane in the high bay area. This project is to reconfigure the operations in the high bay area to collocate the production, R&D, and lab functions for efficiency and safety. The project also includes capital renewal of the major building systems such as mechanical and electrical, code compliance

updates, and seismic upgrades. This project is expected to result in a deferred maintenance reduction of \$1.5 million. This project is the highest priority because it modernizes the oldest facility and the single facility having the most deferred maintenance on site. This modernization will improve production safety and efficiency.

CEBAF Center Addition Phase 2: This project will provide for the construction of approximately 70,000 square feet (SF) addition to CEBAF Center, Building 12. It will be a three-story addition connected to the existing facility as well as a connection to the Phase I Addition on all three floors. The first and second floors primarily allow relocation of functions (library, document center, and conference rooms) currently in leased space. The third floor will provide office space and small meeting rooms. This project is the second of three phases to provide much needed space for world-class scientists to collaborate on various physics programs and consolidate staff currently in numerous trailers and leased office space. Relocation of the library and document center collocates these resources with the majority of the staff. The increased office space consolidates the majority of the Physics and Accelerator staff for efficient teaming needed for physics collaboration. This project will allow elimination of the larger of two off site leases and reduction in annual operating cost.

D.9.c GPP

The FY08 IFI Crosscut Budget, Appendix 6, indicates those GPP projects proposed under the target funding scenario provided by DOE-SC. There are a number of other projects needed to adequately support TJNAF's mission and the DOE-SC vision. A full listing of proposed projects under an alternate investment plan scenario is presented in Appendix 10. This listing aligns with the Jefferson Lab Master Plan, Appendix 3.

D.10 Site Space Bank Analysis

The Space Bank Analysis in Table D-5 is based on the budget profile indicated in Appendix 6. Construction under the Alternate Investment Plan would require additional offset. The TJSO is currently in discussion with ORNL concerning 55,000 SF of offset space to apply to the below shortfall.

Table D-5 Space Bank Analysis

Year	Expected Additions (SF)	Expected Removals (SF)	Net Change (A minus B)	Available Offsetting Space at the Site (SF)
FY05		NA	NA	Baseline 65,400
FY06	73,079	30,772	42,307	23,093
FY07	0	0	0	23,093
FY08	0	0	0	23,093
FY09		0	0	23,093
FY10	2,400	3,680	-1,280	24,373
FY11	23,740	4,700	19,040	5,333
FY12	21,960	0	21,960	-16,627
FY13		0		-16,627
FY14		0		-16,627
FY15	25,0000	0	25,0000	-41,627
FY16	0	0	0	-41,627
FY17	13,800	5,000	8,800	-50,427

D.11 Site's Alternate Investment Plan for GPP and SLI Line Items and Excess Facilities Disposition (EFD)

The majority of the Lab's facility and infrastructure needs are within the GPP project level. In the past, sufficient GPP funds were not available to provide for these long term needs. The character of the site and relatively small land area does not lend itself well to third party investments. In terms of meeting long term needs, there is less of a long term impact on the Lab's operating budget to own versus leasing. TJNAF has obtained significant amounts of third party financing in the past to meet infrastructure needs and for energy savings projects. From a life cycle cost standpoint, TJNAF currently has a reasonable amount of financial liability from third party financing without taking on additional third party financed construction projects.

Table D-6 compares currently planned SC funding to the desired funding levels to construct those projects identified in Appendix 10. The Alternative Investment Plan identifies possible DOD or other non-DOE agency funding for FY07, FY09-FY10, and FY13 to construction additional FEL facilities.

Alternative funding for construction of CEBAF Center Addition Phase 2 (connected to the existing DOE facility) in FY16-FY17 will be requested through the SLI budget process. The fallback for this project is to continue leased space adjacent to the Lab in the ARC building.

The below Alternative Investment Plan GPP funding level will eliminate aging trailers and provides a safe, healthy, secure, “preferred” working environment for laboratory employees and visitors. To meet SC F&I goals, TJNAF will require an increase in GPP funding levels to avoid an impact to the science mission. The project list, Appendix 10, is considered the ideal state. Between \$2-3M of additional GPP funding is now considered necessary to recapitalize the site facilities and make improvements to meet program requirements. JSA will be working during this first year of the management and operations contract to identify economies and opportunities to balance the level of science with facility needs within the available budget

The Lab will be submitting an EFD funding request for disposal of activated shielding blocks used to construct the RADCON Block Structure that is no longer required.

Table D-6 Comparison of SC’s Current F&I Investment Plan to the Site’s Alternative Investment Plan for Direct Funded Needs (i.e., GPP, Line Items and EFD)

Year	SC Planned SLI Line Item Funding	Site Alternate Funding Plan for SLI Line Items	SC Planned GPP Funding	Site Alternate Funding Plan for GPP Funding	SC Planned EFD Funding	Site Alternate Funding Plan for EFD Funding
FY05			\$0.800	\$0.800		
FY06			\$0.967	\$1.127		
FY07		\$0.300	\$0.800	\$3.500		
FY08		\$0.800	\$0.800	\$4.825		
FY09		\$3.0	\$1.200	\$5.794		
FY10	\$4.0	\$7.0	\$1.200	\$5.970		
FY11	\$14.0	\$14.0	\$1.200	\$4.910		
FY12			\$1.200	\$5.545		\$2.0
FY13		\$1.0	\$1.260	\$3.770		\$2.0
FY14			\$1.323	\$3.923		\$1.5
FY15			\$1.389	\$3.889		\$1.5
FY16		\$8.0	\$1.459	\$4.159		
FY17		\$9.0	\$1.532	\$4.032		
Total	\$18.0M	\$43.1M	\$15.13M	\$52.24M	\$0.0M	\$7.0M

D.12 Performance Indicators and Measures The management and operations contractor changed to JSA effective 1 June 2006. The below measures are currently being discussed with the TJSO and have not been agreed to for the remainder of FY06 or FY07.

FY06 Performance Measures

Goal 7.0 Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs

Objective 7.1 Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage and Minimizes Life Cycle Costs.

Measure 7.1.1 Asset Condition Index (ACI).

Measure 7.1.2 Percentage of planned facility condition assessments completed during the fiscal year.

Measure 7.1.3 Percentage of indirect projects completed from the planned project list for the fiscal year.

Objective 7.2 Provide Planning for and Acquire the Facilities and Infrastructure Required to support Future Laboratory Programs

Measure 7.2.1 Schedule Performance on CEBAF Center Addition: Actual completion compared to baseline completion.

Measure 7.2.2 Cost Performance on CEBAF Center Addition Project.

Measure 7.2.3 Cost Performance on Projects \geq \$100K.

Measure 7.2.4 Scheduled Performance on Projects \geq \$100K.

Proposed FY07 Performance Measures

Measure 7.1.1 Asset Condition Index (ACI).

Measure 7.1.2 Extent Contractor validates accuracy of data in the Facilities Information Management System (FIMS).

Measure 7.1.3 The efficiency and effectiveness of contractor efforts for sustainment, recapitalization, and acquisition of required facilities and infrastructure to support laboratory programs.

Measure 7.2.1 The TYSP is recognized by funding entities as providing a sound strategy for acquisition of required facilities and infrastructure to support future laboratory programs.

Measure 7.2.2 Cost Performance on Projects \geq \$100K.

Measure 7.2.3 Scheduled Performance on Projects \geq \$100K.

D.13 Energy Management

The Laboratory energy ten year site plan is a manifestation of the aggressive maintenance program that is already in place. The maintenance program maintains, monitors and repairs facilities equipment to

provide the maximum uninterrupted operations environment for the conduct of scientific investigations. The administration of this program, along with the overarching Departmental administrative policy on energy management, will continue as before. An additional staff member will be required to execute the existing and new aspects of the energy management program and plan.

The Energy Policy Act of 2005 has extended the previous requirements and modified other requirements to the year 2015. Although these requirements are achievable, there must be a continued allowance made for mission growth. Mission growth will cause the Laboratory energy budget to expand as capacity is increased for higher beam energy and associated computational needs. The following noteworthy items in the Energy Policy Act are:

1. **Mandated 20% reduction over FY03.** The Lab used 128.4 MBTU/KGSF in FY03, which is the new baseline year. The base year previously was 1999 with a consumption of 214.0 MBTU/KGSF and new baseline year of FY03 is 40% of the original baseline year. The new target is 102.7 MBTU/KGSF, and compared with our present consumption in FY05 (112 MBTU/KGSF), approximately 9% savings remains to be achieved. Each of the buildings currently being reported for energy consumption have recently been upgraded, and future modifications do not offer life cycle justified gains in energy reduction. However, the maintenance will continue to be a key component of the energy efficiency of thermal systems. Optimum use of power will be implemented and be specifically geared to reducing operating hours to match Laboratory needs. Other exempt buildings such as the EEL and Test Lab will incorporate improved efficiency system design so that similar energy reductions can be achieved.
2. **Green house gas reduction.** There is little room for improvement here. The Lab has replaced all CFC chillers except one. This chiller will be replaced in FY09 when the Computer Center attains full capacity because two new chillers in a satellite chiller plant will be required for the additional Computer Center heat load. The Lab uses natural gas for heating, which is the most economical, least polluting and lowest greenhouse effect fossil fuel that is available.
3. **Electrical Metering.** The required metering must be installed on all buildings by 2012. To achieve this with minimum service interruption, the meters can be installed in the accelerator (CEBAF) during maintenance outages 12 GEV CEBAF Upgrade down period. Metering in other locations can be spread out over the 5 year time line to minimize the project cost and impact to schedule. Metering is expected to be in place by 2012 at a total cost of \$350,000.
4. **New buildings designed to 30% below American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) Standards or International Energy Code if life cycle cost effective.** All future new non-exempt buildings will be designed to satisfy this requirement.
5. **Green Power.** The Energy Policy Act of 2005, Section 203: Renewable electricity consumption goals are as follows: 3% in FY07-FY09, 5% in FY10-FY12, and 7.5% in FY13 thereafter. These goals can only be met in cooperation with Virginia Power and its distribution network. The Laboratory will negotiate directly with Virginia Power for certification of source of power or purchase power from an outside power production company.

D.14 Leasing & Third Party / Non-Federal Funded Construction of New Buildings

There are currently two leases greater than 10,000 for office space as shown in Table D-7. Both are adjacent to DOE property. In addition there is currently one warehouse lease less than 10,000 SF located about a mile from the site.

Table D-7. Current Leases

Name	Use	SF	# Employees	Future Plans
ARC Building	Office & Lab	44,342	156	Base lease expires FY08, extend lease until CEBAF Center Addition Phase 2 is funded. Currently the Lab plans to extend for 5 years.
VARC	Office	34,739	75	Lease cost \$1 per year; Lab is responsible for all operating and improvement costs. Continue to use indefinitely.

Potential Leases. Two potential leases are shown in Table D-8. Shipping & Receiving/Storage Building is under evaluation for construction using Program GPP Funding and/or Lease. This is the only planned facility that currently lends itself to third party financing due to the availability of land at the property boundary. Construction of the shipping/receiving facility relocates this function from a lab building in the center of the campus to the site perimeter, correcting both security and safety concerns. This project is currently identified as an Alternate Investment Plan, redirect of SC-NP operating funds to GPP.

This Ten Year Site Plan is based on a +3.5% budget scenario. If funding were closer to the proposed budget levels additional office, technical, and laboratory space could be required. If this requirement materializes, the City of Newport News has indicated a willingness to construct up to 50,000 SF of space adjacent to the Lab for long term lease. Additional space in the current lease facility, ARC Building, is currently not available.

Table D-8. Potential Leases

Name	Use	SF	# Employees	Estimated Start Date
Shipping & Receiving/Storage Bldg	Shipping/Receiving/Warehouse	21,000	10	FY10
ARC II	Additional office, technical, lab space	25,000	60	FY12

JEFFERSON LAB EXISTING PLAN

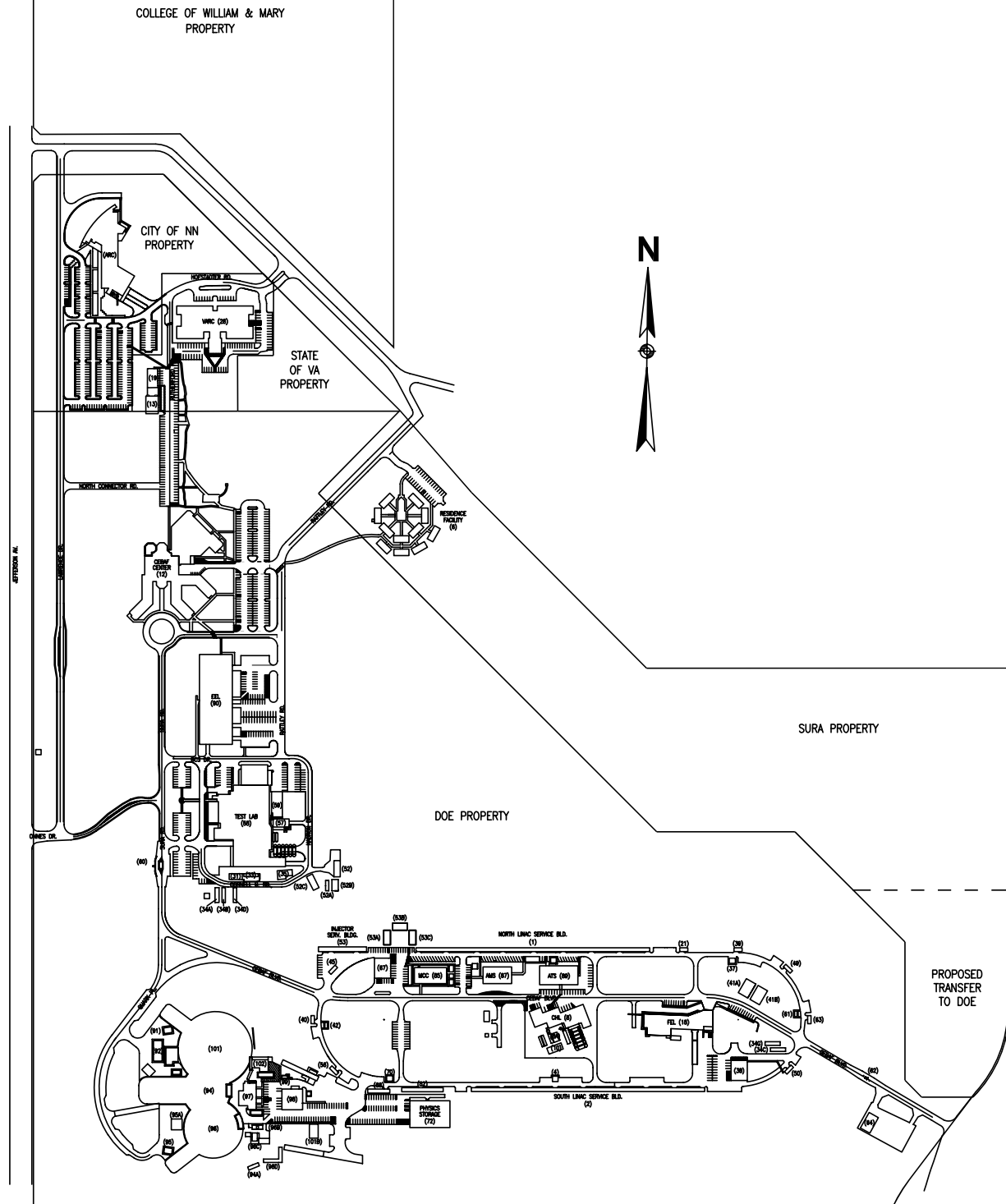


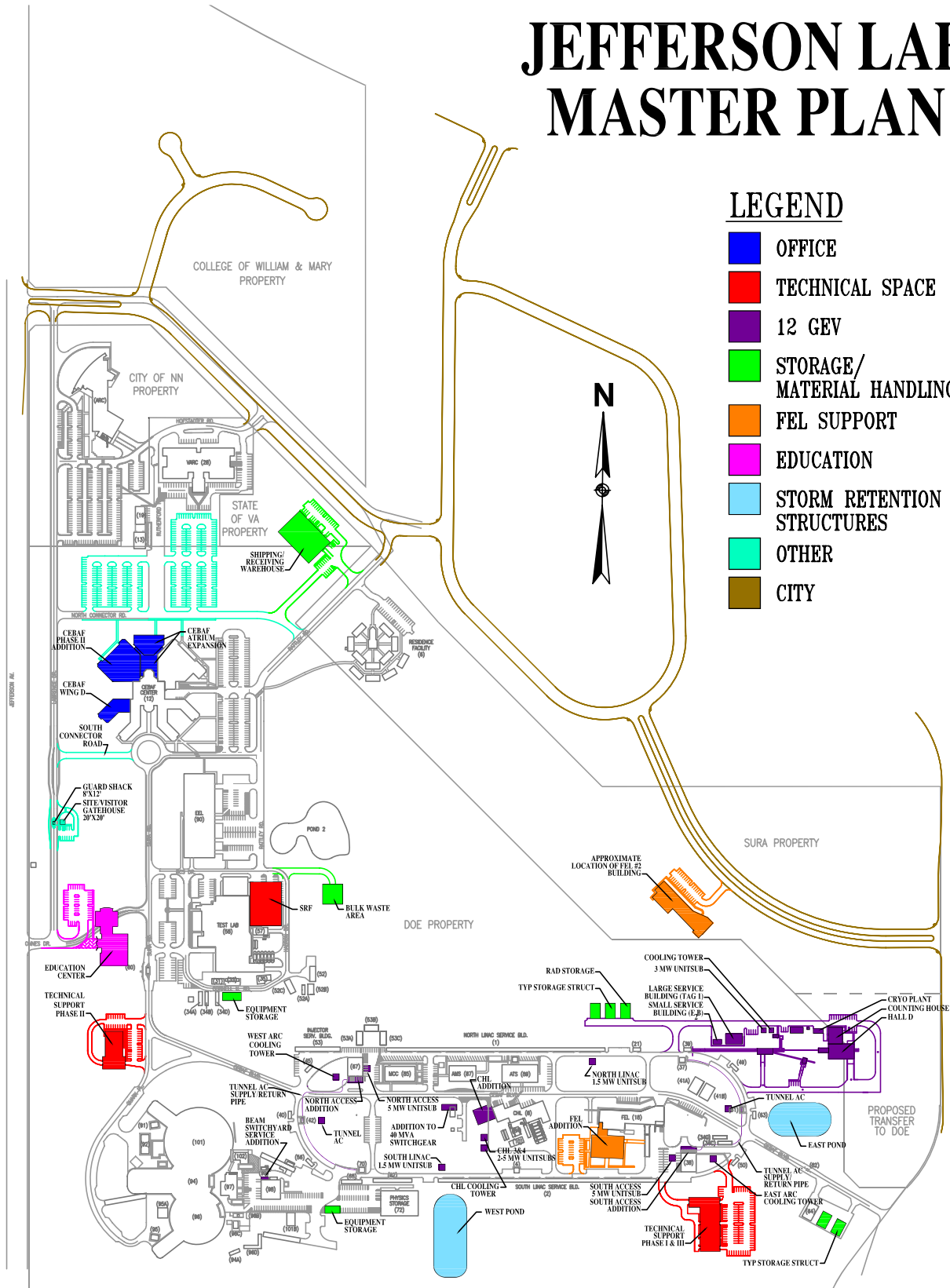


Photo taken in 2004, land has been cleared for construction of CEBAF Center Addition

JEFFERSON LAB MASTER PLAN

LEGEND

- OFFICE
- TECHNICAL SPACE
- 12 GEV
- STORAGE/
MATERIAL HANDLING
- FEL SUPPORT
- EDUCATION
- STORM RETENTION
STRUCTURES
- OTHER
- CITY



PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	GROSS SF	2005 REPLACEMENT PLANT VALUE (RPV)	2005 DEFERRED MAINTENANCE (DM)	2005 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
Building	001	NORTH LINAC	680	Owned	12,850	\$1,822,259	\$35,180	\$9,550	16	Excellent
Building	002	SOUTH LINAC	680	Owned	12,850	\$1,822,259	\$36,793	\$9,550	16	Good
Building	004	EXIT STAIR 4	680	Owned	487	\$227,220	\$8,782	\$6,619	16	Good
Building	007	EXIT STAIR 1	680	Owned	487	\$227,220	\$9,178	\$6,619	16	Good
Building	008	Central Helium Liqifier	501	Owned	16,971	\$9,091,313	\$144,251	\$48,240	16	Excellent
Building	008A	CHL PUMP HOUSE	501	Owned	731	\$586,797	\$4,302		13	Excellent
Building	012	CEBAF Center	501	Owned	66,277	\$12,243,969	\$168,391	\$23,882,498	17	Excellent
Building	013	PE STORAGE SHED	501	Owned	2,990	\$192,170	\$1,936		7	Excellent
Building	016A	STORAGE SHED BEAMS	501	Owned	68	\$4,370			12	Excellent
Building	018	Free Electron Laser Building	501	Owned	31,176	\$8,269,428	\$6,453	\$22,651	9	Excellent
Building	019	FM Maintenance Shop		Leased	2,904	\$576,696	\$20,084		41	
Building	021	NORTH EXTRACTOR SVS BLDG	680	Owned	460	\$90,165	\$8,558	\$342	16	Adequate
Building	028	VARC		Leased	34,739	\$4,518,360	\$384,095	\$18,887	41	
Building	031	Acid Building	501	Owned	1,071	\$331,279		\$102,580	17	Excellent
Building	033	Chemical Storage	501	Owned	612	\$189,302	\$860		17	Excellent
Building	037	EXIT STAIR 2	680	Owned	487	\$227,220	\$12,013	\$6,619	16	Adequate
Building	038	SOUTH ACCESS BUILDING	680	Owned	6,075	\$3,095,781	\$10,384	\$348,515	16	Excellent
Building	039	EAST ARC SVS BLDG.	680	Owned	460	\$90,165	\$5,940	\$342	16	Adequate
Building	040	WEST ARC SVS BLDG	680	Owned	460	\$90,165	\$6,472	\$342	16	Adequate
Building	042	EXIT STAIR 6	680	Owned	259	\$120,842	\$11,951	\$6,450	16	Adequate
Building	045	WEST ARC SVS BLDG	680	Owned	548	\$107,413	\$7,153	\$407	16	Adequate
Building	049	EAST ARC SVS BLDGS	680	Owned	548	\$107,413	\$7,906	\$407	16	Adequate
Building	050	EAST ARC SVS BLDG	680	Owned	548	\$107,413	\$7,502	\$407	16	Adequate
Building	052	Test Lab Annex	501	Owned	1,326	\$375,988	\$6,130	\$52,744	41	Excellent
Building	053	Injector Service Bldg	680	Owned	3,150	\$574,529	\$4,483	\$2,341	16	Excellent
Building	054	Radcon Calibration	501	Owned	1,017	\$288,371			12	Excellent
Building	054A	PROPERTY STORAGE CANOPY	501	Owned	540	\$34,706	\$538		12	Excellent
Building	056	WEST ARC SVS BLDG	680	Owned	460	\$90,165	\$7,064	\$342	16	Adequate
Building	057	Cryogenics Test Facility	501	Owned	2,301	\$652,450	\$5,915		18	Excellent
Building	058	Test Lab	501	Owned	95,902	\$27,193,074	\$1,876,481	\$9,204,424	41	Adequate
Building	058B	STORAGE SHED	501	Owned	241	\$15,489	\$15,489		41	Fail
Building	059	Accelerator Tech Shop	501	Owned	3,683	\$498,093	\$16,025		18	Good
Building	060	GUARD HOUSE	501	Owned	160	\$28,537	\$2,125		12	Adequate
Building	061	EXIT STAIR 3	680	Owned	259	\$120,842	\$4,147	\$6,450	16	Good
Building	062	Canon Guard Shack	501	Owned	24	\$42,927	\$753		7	Excellent
Building	063	EAST ARC SVS BLDG	680	Owned	460	\$90,165	\$5,958	\$342	16	Adequate

PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	GROSS SF	2005 REPLACEMENT PLANT VALUE (RPV)	2005 DEFERRED MAINTENANCE (DM)	2005 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
Building	064	Fabric Storage Building I	501	Owned	2,774	\$159,510			1	
Building	067	NORTH ACCESS BUILDING	680	Owned	6,075	\$2,858,275	\$12,535	\$348,515	16	Excellent
Building	068	WEST ARC SVS BLDG	680	Owned	1,217	\$238,544	\$6,548	\$904	16	Good
Building	070	EXIT STAIR 5	680	Owned	487	\$227,220	\$9,621	\$362	16	Good
Building	072	Physics Storage Building	501	Owned	20,415	\$1,312,091	\$11,600	\$15,173	8	Excellent
Building	082	SOUTH EXTRACTOR SVS BLDG	680	Owned	2,289	\$324,603	\$14,744	\$1,701	16	Good
Building	085	Machine Control Center	501	Owned	7,625	\$1,945,453	\$22,004	\$5,667	16	Excellent
Building	087	Accel Maintenance & Support Bldg	501	Owned	6,720	\$908,821	\$6,297	\$67,373	11	Excellent
Building	089	ATS Building	501	Owned	10,152	\$1,372,969	\$8,487	\$91,434	9	Excellent
Building	090	Experimental Equipment Lab	501	Owned	53,997	\$9,308,966	\$495,695	\$775,772	16	Adequate
Building	090A	Storage Shed	501	Owned	434	\$27,894	\$1,049		8	Good
Building	090B	Storage Shed	501	Owned	510	\$32,778			3	Excellent
Building	091	BEAM DUMP COOLING BLDG.	680	Owned	630	\$456,260	\$3,108	\$468	13	Excellent
Building	092	SERVICE BLDG	680	Owned	2,487	\$453,604	\$5,854	\$72,539	13	Excellent
Building	095	BEAM DUMP COOLING BLDG	680	Owned	630	\$456,260	\$3,227	\$468	13	Excellent
Building	095A	Lead Storage Facility	501	Owned	1,600	\$87,347			<1	
Building	096B	HALL B GAS SHED	501	Owned	693	\$139,727	\$16,957		11	Fair
Building	096C	HALL C GAS SHED	501	Owned	96	\$19,356	\$881		11	Good
Building	097	Counting House	501	Owned	17,587	\$4,986,805	\$14,383	\$653,139	13	Excellent
Building	098	Cryo Weld Shop/Service Bldg	501	Owned	6,164	\$1,135,720	\$21,108	\$4,581	13	Excellent
Building	099	EXIT STAIRWELL	680	Owned	212	\$98,913	\$1,613	\$6,415	16	Excellent
Building	101A	HALL A GAS SHED	501	Owned	360	\$72,585	\$3,932		10	Adequate
Building	102	End Station Refrigeration Bldg	501	Owned	3,040	\$612,944	\$4,723	\$6,101	13	Excellent
Building	110	SMOKERS SHACK (28)	501	Owned	54	\$6,139			13	Excellent
Building	111	SMOKERS SHACK (16)	501	Owned	54	\$6,139			13	Excellent
Building	112	SMOKERS SHACK (12)	501	Owned	54	\$6,139			13	Excellent
Building	113	SMOKERS SHACK (90)	501	Owned	54	\$6,139			13	Excellent
Building	114	SMOKERS SHACK(85)	501	Owned	54	\$6,139			13	Excellent
Building	115	SMOKERS SHACK (87/89)	501	Owned	54	\$6,139			13	Excellent
Building	116	SMOKERS SHACK (97)	501	Owned	54	\$6,139			13	Excellent
Building	ARC	Applied Research Center		Leased	42,724	\$5,717,188	\$28,788		8	
RP Trailer	010	Cryo Trailer	501	Owned	1,187	\$123,793	\$123,793		16	Fail

PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	GROSS SF	2005 REPLACEMENT PLANT VALUE (RPV)	2005 DEFERRED MAINTENANCE (DM)	2005 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
RP Trailer	034A	Accel. Tech.	501	Owned	753	\$78,531	\$78,531		19	Fail
RP Trailer	034B	Accel Tech Trailer B	501	Owned	753	\$78,531	\$78,531		19	Fail
RP Trailer	034C	Building Trailer was 15	501	Owned	660	\$68,832	\$68,832		17	Fail
RP Trailer	034D	User Liaison Group Trailer	501	Owned	660	\$68,832	\$68,832		19	Fail
RP Trailer	034G	User Group Trailer	501	Owned	660	\$68,832	\$68,832		16	Fail
RP Trailer	035	Accelerator EH&S Trailer	501	Owned	1,676	\$174,792	\$174,792		18	Fail
RP Trailer	052A	Radiation Control Trailer	501	Owned	661	\$68,936	\$68,936		15	Fail
RP Trailer	052B	Radiation Control Trailer	501	Owned	1,322	\$137,873	\$137,873		11	Fail
RP Trailer	052C	Radcon Training Center	501	Owned	1,327	\$138,394	\$138,394		12	Fail
RP Trailer	053A	Accel Installation Trailer	501	Owned	1,187	\$123,793	\$123,793		11	Fail
RP Trailer	053B	Accel Installation Trailer	501	Owned	1,187	\$123,793	\$123,793		11	Fail
RP Trailer	053C	Accel Installation Trailer	501	Owned	1,187	\$123,793	\$123,793		11	Fail
RP Trailer	054B	FM Equipment Canopy	501	Owned	400	\$41,716			4	Excellent
RP Trailer	092A	Facilities Storage Shed	725	Owned	192	\$5,511	\$108		8	Excellent
RP Trailer	092B	Facilities Storage Shed	725	Owned	192	\$5,511	\$108		8	Excellent
RP Trailer	094A	Physics Trailer Hall B	501	Owned	649	\$67,685	\$67,685		12	Fail
RP Trailer	096D	Install Trailer Hall B	501	Owned	1,295	\$135,057	\$135,057		13	Fail
RP Trailer	101B	Hall A Tech Trailer	501	Owned	1,823	\$190,122	\$190,122		9	Fail
PP Trailer	801	Container F21923	725	Owned	280	\$8,036	\$8,036		26	Fail
PP Trailer	802	Container Physics (90)	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	803	Container SNS	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	804	Container	725	Owned	320	\$9,184	\$9,184		21	Fail
PP Trailer	805	Container	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	806	Container	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	807	Container	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	808	Container F24198	725	Owned	280	\$8,036	\$8,036		37	Fail
PP Trailer	809	Container F24319	725	Owned	280	\$8,036	\$8,036		37	Fail
PP Trailer	810	Container F2667	725	Owned	320	\$9,184	\$9,184		38	Fail
PP Trailer	811	Container F219267	725	Owned	280	\$8,036	\$8,036		38	Fail
PP Trailer	812	Container F27496	725	Owned	280	\$8,036	\$8,036		38	Fail
PP Trailer	813	Container F2808	725	Owned	320	\$9,184	\$9,184		37	Fail
PP Trailer	814	Container F2629	725	Owned	320	\$9,184	\$9,184		29	Fail
PP Trailer	815	Container F24197	725	Owned	280	\$8,036	\$8,036		38	Fail
PP Trailer	816	Container F28065	725	Owned	320	\$9,184	\$9,184		38	Fail
PP Trailer	817	Container F219809	725	Owned	320	\$9,184	\$9,184		38	Fail
PP Trailer	818	Container F219266	725	Owned	320	\$9,184	\$9,184		26	Fail
PP Trailer	819	Container F219292	725	Owned	320	\$9,184	\$9,184		38	Fail
PP Trailer	820	Container F219281	725	Owned	320	\$9,184	\$9,184		38	Fail
PP Trailer	821	Container F219283	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	822	Container F216946	725	Owned	320	\$9,184	\$9,184		36	Fail

PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	GROSS SF	2005 REPLACEMENT PLANT VALUE (RPV)	2005 DEFERRED MAINTENANCE (DM)	2005 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
PP Trailer	823	Container F219278	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	825	Container F219206	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	826	Container F219207	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	827	Container F219208	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	829	Container F219210	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	830	Container F219211	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	831	Container F219212	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	832	Container	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	833	Container	725	Owned	320	\$9,184	\$9,184		21	Fail
PP Trailer	834	Container	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	835	Container F209598	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	836	Container F28334	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	837	Container F27925	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	838	Container F2192654	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	839	Container F208910	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	840	Container F28063	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	841	Container F210791	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	842	Container F219765	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	843	Container F217966	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	844	Container F23501	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	845	Container F23502	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	846	Container 4316	725	Owned	280	\$8,036	\$8,036		33	Fail
PP Trailer	847	Container F219284	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	848	Container F219924	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	849	Container F219276	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	850	Container F219277	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	851	Container F219301	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	852	Container F219301	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	856	Container F219286	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	857	Container F219280	725	Owned	280	\$8,036	\$8,036		40	Fail
PP Trailer	858	Container F219279	725	Owned	280	\$8,036	\$8,036		38	Fail
PP Trailer	859	Container F2809	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	860	Container F24344	725	Owned	280	\$8,036	\$8,036		28	Fail
PP Trailer	861	Container F2628	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	862	Container F24200	725	Owned	280	\$8,036	\$8,036		34	Fail
PP Trailer	863	Container F209956	725	Owned	280	\$8,036	\$8,036		36	Fail
PP Trailer	864	Container SNS	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	865	Container 865	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	866	Container 866	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	867	Container 867	725	Owned	320	\$9,184	\$9,184		36	Fail
PP Trailer	868	Container Physics	725	Owned	160	\$4,592	\$4,592			Fail

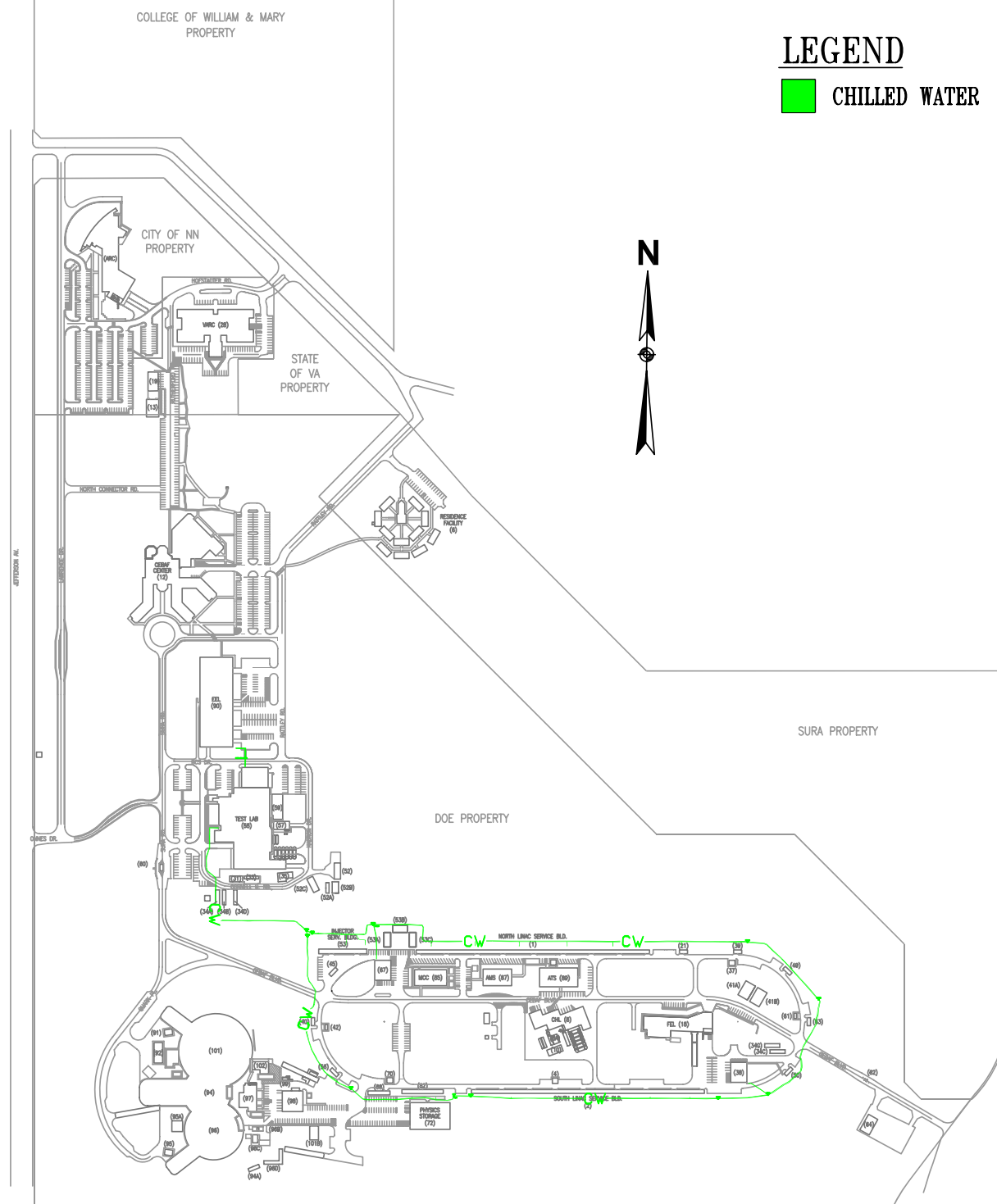
PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	GROSS SF	2005 REPLACEMENT PLANT VALUE (RPV)	2005 DEFERRED MAINTENANCE (DM)	2005 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
PP Trailer	869	Container Hall A 869	725	Owned	320	\$9,184	\$9,184			Fail
PP Trailer	870	Container Hall A 870	725	Owned	320	\$9,184	\$9,184			Fail
PP Trailer	871	Container (F218828)	725	Owned	320	\$9,184	\$9,184		15	Fail
PP Trailer	872	Container (F221672)	725	Owned	320	\$9,184	\$9,184		15	Fail
PP Trailer	873	Container (F221671)	725	Owned	320	\$9,184			15	Excellent
PP Trailer	874	Container (F221669)	725	Owned	320	\$9,184			15	Excellent
PP Trailer	875	Container (F221670)	725	Owned	320	\$9,184			15	Excellent
PP Trailer	876	Container (F221673)	725	Owned	320	\$9,184			15	Excellent
PP Trailer	877	Container (F221674)	725	Owned	320	\$9,184			15	Excellent
PP Trailer	TENT	Helios Storage Tent	725	Owned	1,200	\$13,029			6	Excellent
OSF	014	Cooling Tower	550	Owned		\$534,532	\$153,870		16	
OSF	044	Cooling Tower	550	Owned		\$403,420	\$153,870	\$34,193	16	
OSF	065	Cooling Tower	550	Owned		\$403,420	\$153,870	\$44,451	16	
OSF	093	Cooling Tower	550	Owned		\$403,420	\$153,870	\$34,194	13	
OSF	094	Hall B (incl. truck ramp & beam dump)	680	Owned	17,706	\$12,692,563	\$17,208	\$13,159	13	
OSF	094E	Equipment in Hall B	680	Owned		\$46,021,425			13	
OSF	096	Hall C (incl. truck ramp & beam dump)	680	Owned	28,415	\$22,094,756	\$20,972	\$21,118	13	
OSF	096E	Equipment in Hall C	680	Owned		\$8,278,215			13	
OSF	101	Hall A (incl. truck ramp and beam dump)	680	Owned	34,861	\$25,964,823	\$67,384	\$20,987	13	
OSF	101E	Equipment in Hall A	680	Owned		\$14,074,840			13	
OSF	103	ESR Cooling Tower	550	Owned		\$175,488			4	
OSF	999	Beam Tunnel Facility	680	Owned	111,810	\$40,220,436	\$102,580	\$83,098	16	
OSF	999E	Accelerator Equipment	680	Owned		\$299,248,150			16	
OSF	BLOCK HOUSE	RADCON Block Structure	550	Owned		\$68,881			15	
OSF	COMM	Telecommunication	610	Owned		\$1,532,275		\$205,160	22	
OSF	ELECTRICIAL SYSTEM	Site Wide Elect Distribution System	615	Owned		\$2,961,100	\$46,161	\$3,301,392	18	
OSF	FENCING	Accel Site Security Fence	480	Owned		\$482,900		\$615,480	19	
OSF	LCW SYSTEM	Low Conductivity Water System	650	Owned		\$2,455,309	\$346,052	\$629,580	16	
OSF	MONITORING WELLS	Boundary Radiation Monitor Wells	650	Owned		\$130,996			17	
OSF	PARKING	Sitewide Parking	470	Owned		\$1,668,406		\$411,857	20	
OSF	POTABLE WATER SYSTEM	Sitewide Potable Water System	650	Owned		\$1,090,325			19	
OSF	ROADS	Sitewide Roads	470	Owned		\$2,770,154	\$257,628	\$429,291	19	

PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	GROSS SF	2005 REPLACEMENT PLANT VALUE (RPV)	2005 DEFERRED MAINTENANCE (DM)	2005 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
OSF	SEWAGE SYSTEM	Sitewide Sewage System	640	Owned		\$416,697			19	
OSF	SIDEWALKS	Sitewide Sidewalks	470	Owned		\$233,857	\$13,503	\$86,044	16	
OSF	SITE PREPARTION	Site Prepartion	460	Owned		\$2,956,781	\$48,163	\$32,626	19	
OSF	STORM DRAINAGE	Sitewide Storm Drainage System	460	Owned		\$378,377	\$179,881	\$1,612,865	19	

JEFFERSON LAB UTILITY PLAN

LEGEND

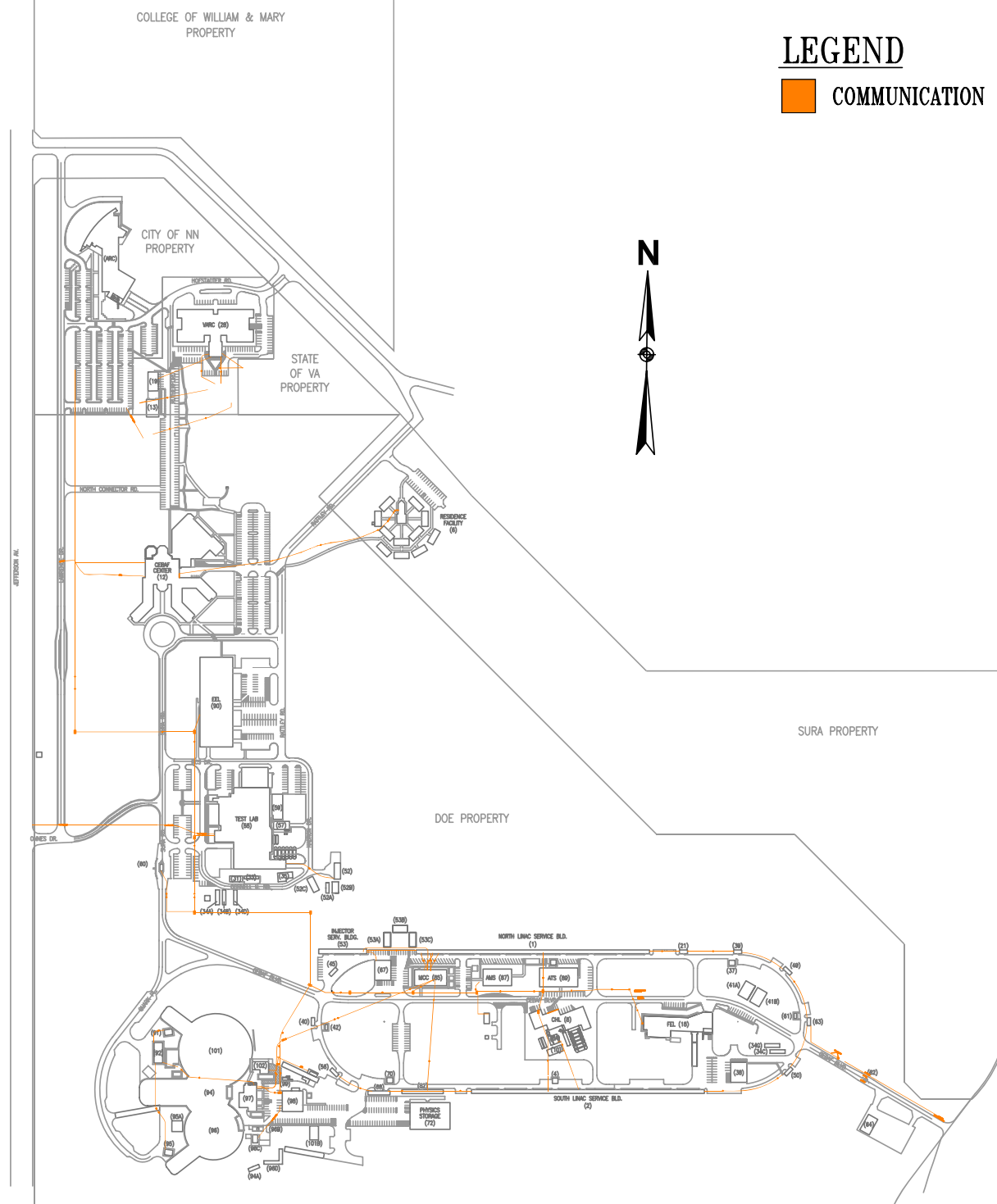
 CHILLED WATER



JEFFERSON LAB UTILITY PLAN

LEGEND

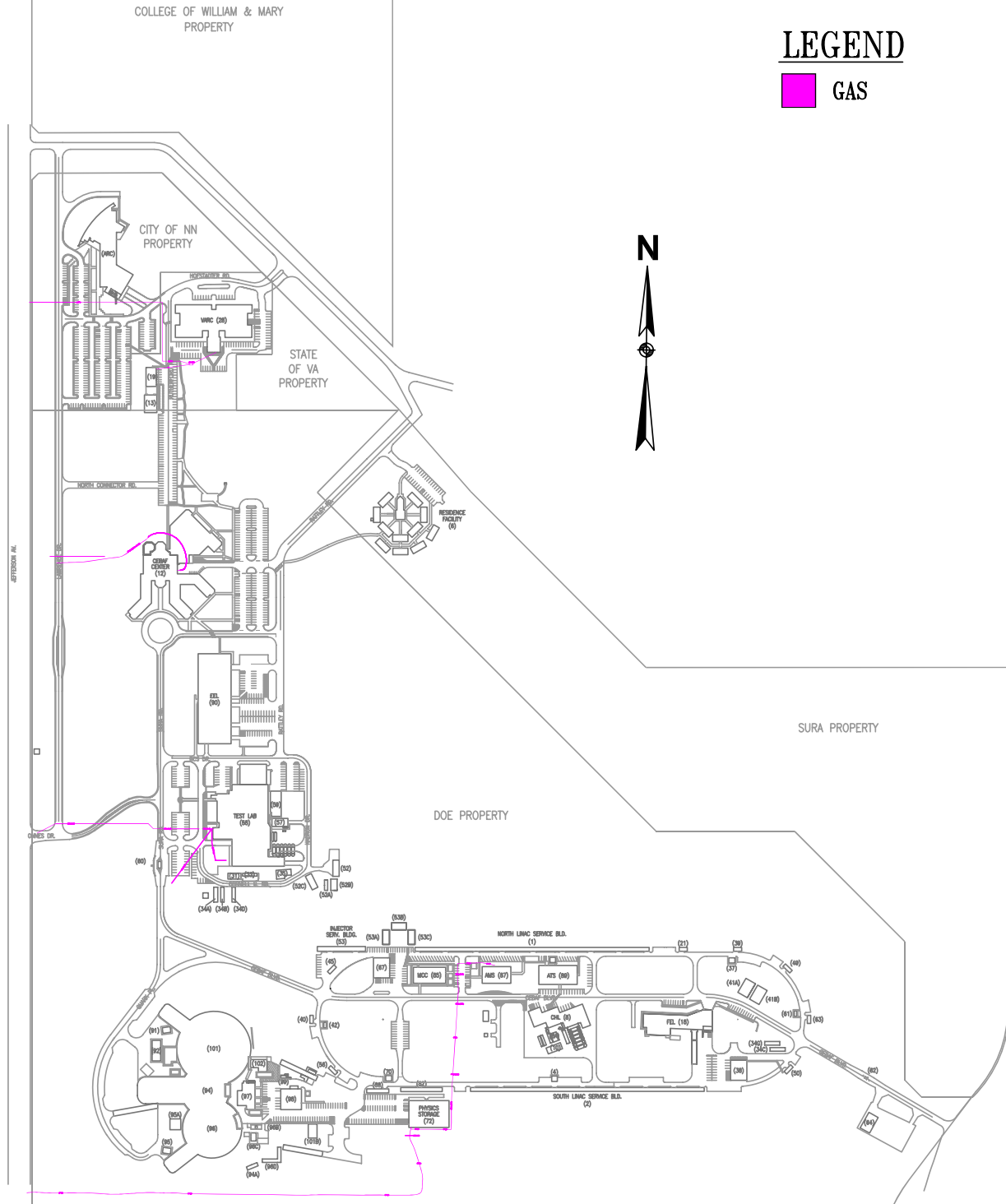
COMMUNICATION



JEFFERSON LAB UTILITY PLAN

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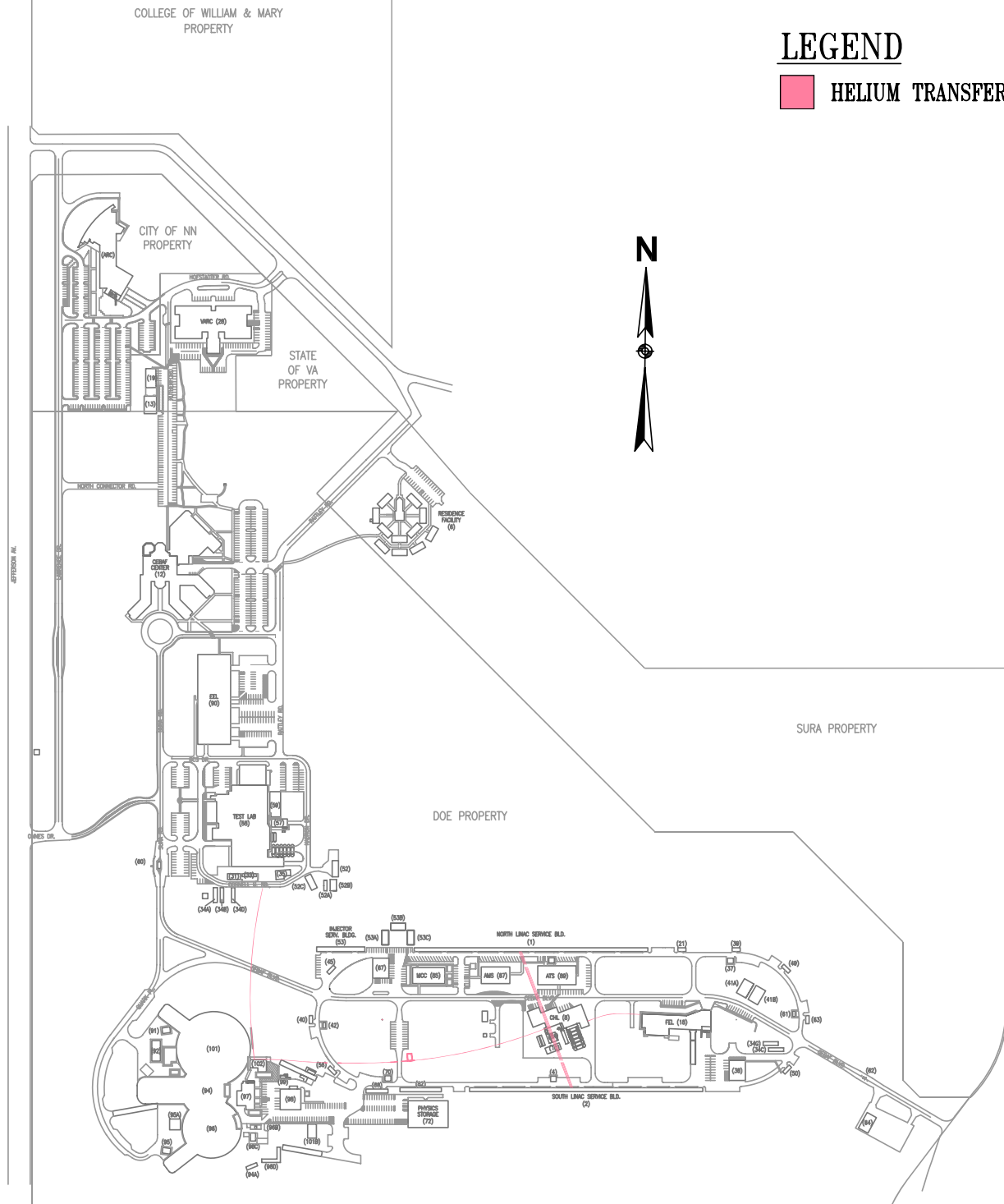
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JEFFERSON LAB UTILITY PLAN

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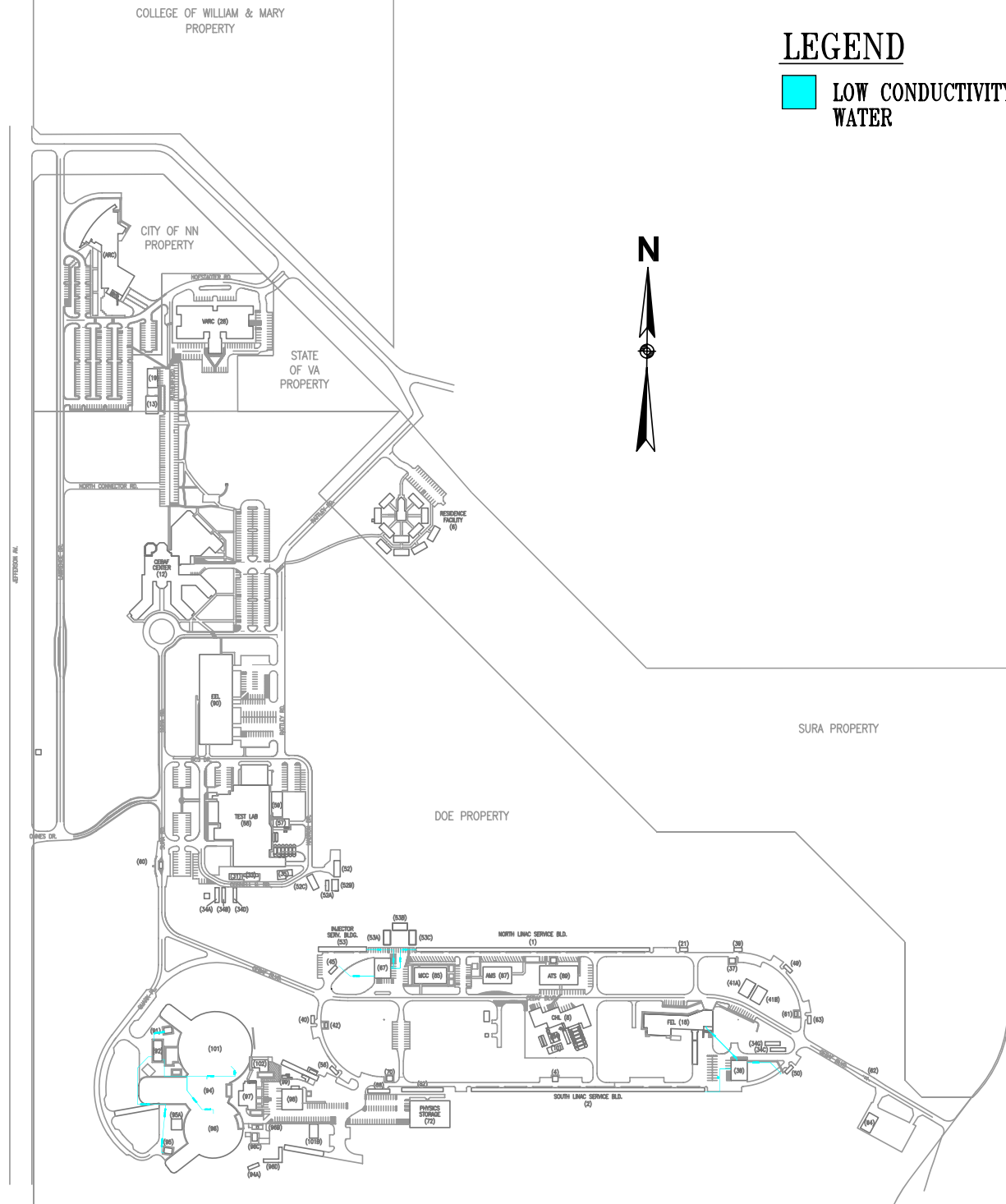
HELIUM TRANSFER



JEFFERSON LAB UTILITY PLAN

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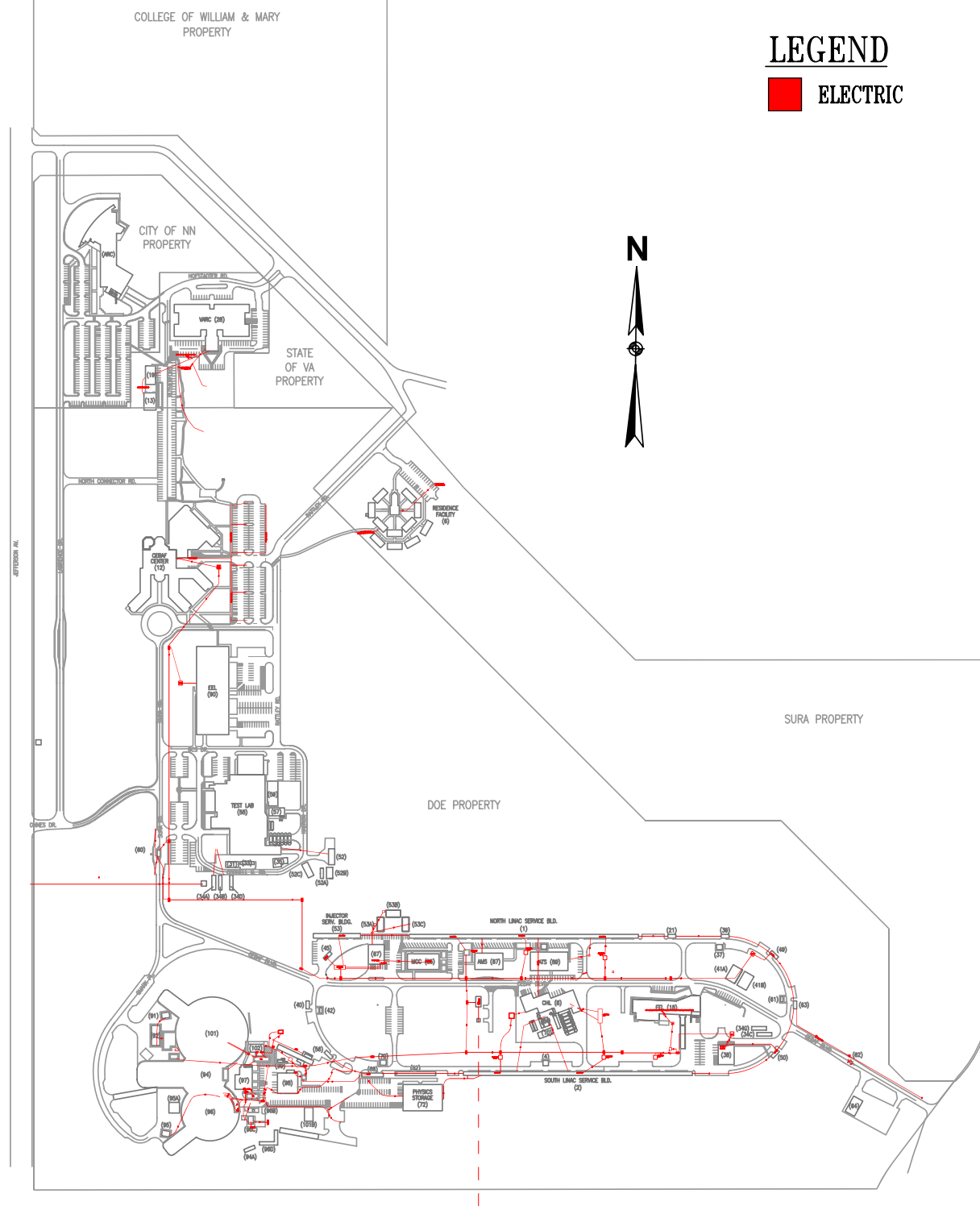
 LOW CONDUCTIVITY
WATER



JEFFERSON LAB UTILITY PLAN

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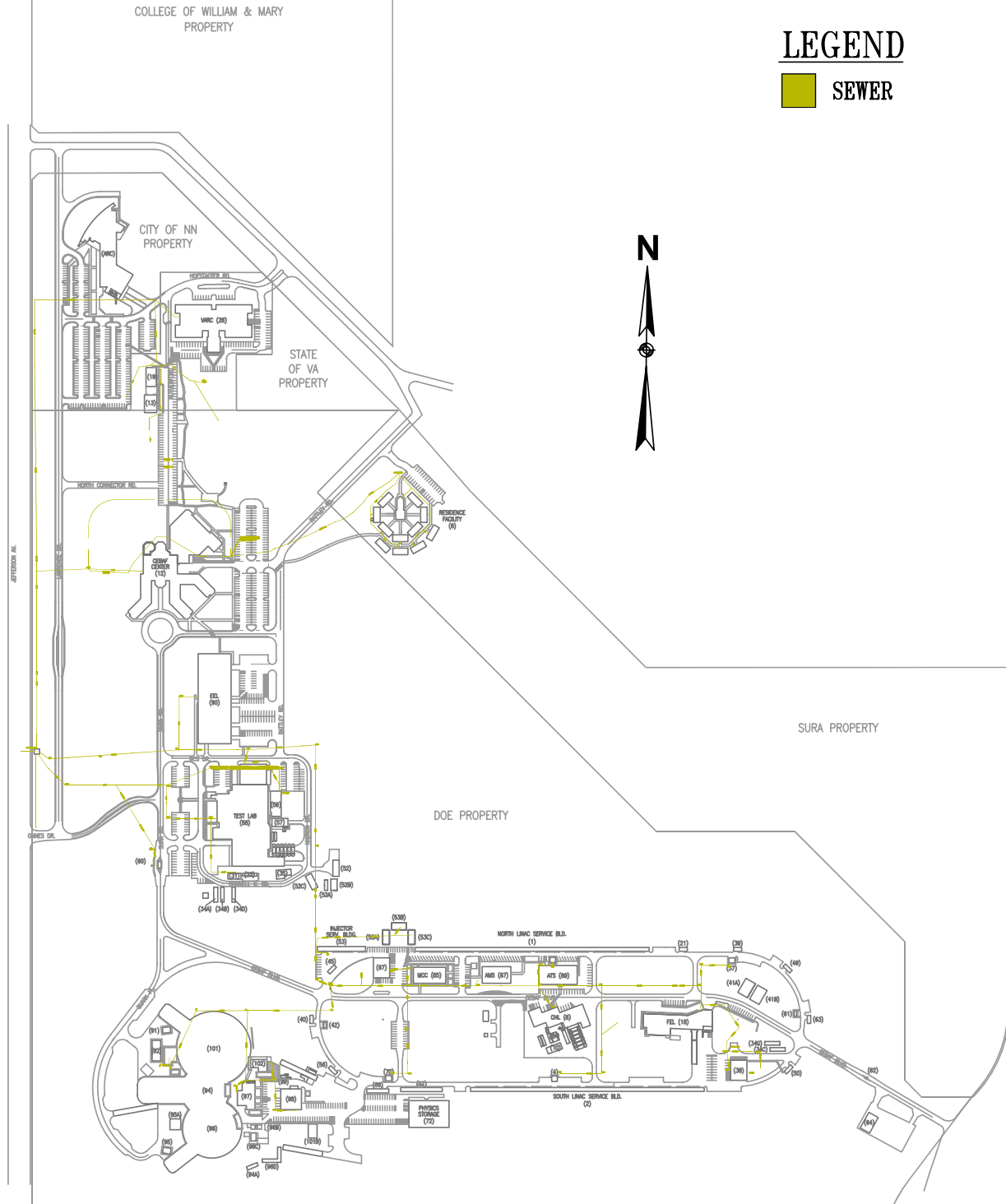
ELECTRIC



JEFFERSON LAB UTILITY PLAN

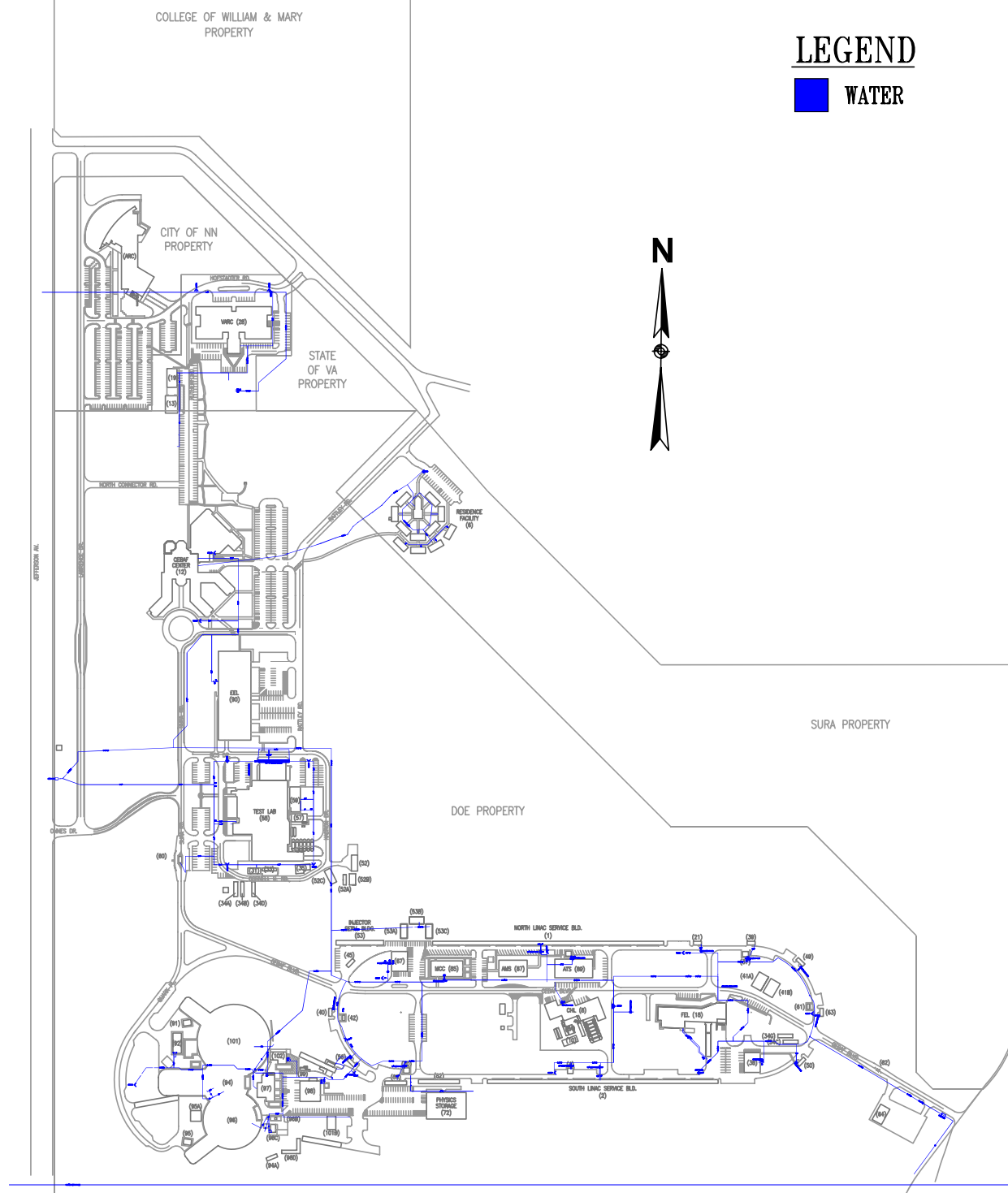
LEGEND

 SEWER



JEFFERSON LAB UTILITY PLAN

LEGEND

 WATER

Integrated Facilities and Infrastructure Budget Data Sheet (IFI)	Deferred Maintenance Reduction	Gross Building Area	FY PY Approp. (\$000)	FY 2006 Approp (\$000)	FY 2007 Budget (\$000)	FY 2008 Budget (\$000)	FY 2009 Budget (\$000)	FY 2010 Budget (\$000)	FY 2011 Budget (\$000)	FY 2012 Budget (\$000)	FY 2013 Budget (\$000)	FY 2014 Budget (\$000)	FY 2015 Budget (\$000)	FY 2016 Budget (\$000)	FY 2017 Budget (\$000)
SITE NAME: Thomas Jefferson National Accelerator Facility															
PROGRAM: Nuclear Physics															
1.0 Capital Line Item															
1.1 New Infrastructure Construction (facilities and additions)															
None															
Subtotal 1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2 All Other Infrastructure Projects (recap)															
Test Lab Rehab (SLI Funded)	1538							4,000	14,000						
Subtotal 1.2	1,538	-	-	-	-	-	-	4,000	14,000	-	-	-	-	-	-
Total Infrastructure Line Items (1.1+1.2)	1,538	-	-	-	-	-	-	4,000	14,000	-	-	-	-	-	-
1.3 Programmatic Line Items that Add Space															
12 GeV Conventional Facilities		26,700			PED	TBD	TBD								
Subtotal 1.3	-	26,700	-	-				-	-	-	-	-	-	-	-
Subtotal Line Item Projects (1.1+1.2+1.3)	1,538	26,700	-	-	PED	TBD	TBD	4,000	14,000	-	-	-	-	-	-
2.0 General Plant Project (GPP) (Funding Program: Nuclear Physics)															
2.1 New Construction (facilities and additions)															
Accelerator Site Technical Building	488	17,000	750		700	700	900	570							
East Site Drainage Improvements		-		700											
Site Sidewalks		-		160											
RADCON Storage Building		2,400					200								
SRF Annex	16	25,000						530	760	1,100	1,160	950			
Machine Shop Covered Material Storage		2,000							340						
Hall A Power & Cooling		-										273			
CEBAF Center Wing D	520	13,800											1,000	914	1,432
West Site Waterline (Complete Fire Protection Loop)		-												225	
Subtotal 2.1 New Construction GPP	1,024	60,200	750	860	700	700	1,100	1,100	1,100	1,100	1,160	1,223	1,000	1,139	1,432
2.2 All Other Projects (recap)															
Miscellaneous projects				92											
Hall A VESDA Head Replacement (DOE HQ Funded)	54			75											
Tunnel Dry Pipe Sprinkler Pipe Replacement (DOE HQ Funded)	100			100											
Miscellaneous projects					100										
Miscellaneous projects						100									
Miscellaneous projects							100								
Miscellaneous projects								100							
Miscellaneous projects									100						
Miscellaneous projects										100					
Miscellaneous projects											100				
CEBAF Center HVAC													289	220	
Miscellaneous projects												100			
Miscellaneous projects													100		
Miscellaneous projects														100	
Miscellaneous projects															100
Subtotal 2.2 New Construction GPP	154	-	-	267	100	100	100	100	100	100	100	100	389	320	100
Subtotal GPP:(2.1+2.2)	1,178	60,200	750	1,127	800	800	1,200	1,200	1,200	1,200	1,260	1,323	1,389	1,459	1,532
3.0 Institutional General Plant Project (IGPP)															
Not Applicable															
Subtotal IGPP Projects															
4.0 Operating/Expense for Excess Elimination and Other															
4.1 Excess Elimination (demolition, sale, lease, transfer) Show area eliminated in Gross Area column															

None															
4.1 Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	-
4.2 All Other (List direct O&E maintenance under 5.1)															
None															
4.2 Subtotal			0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Operating/Expense Projects (4.1+4.2)			-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL Capital & Operating Investment: (Not including Programmatic Line Item)			1,127	800	800	1,200	5,200	15,200	1,200	1,260	1,323	1,389	1,459	1,532	
TOTAL Overhead Investments (IGPP)			-	-	-	-	-	-	-	-	-	-	-	-	-

Integrated Facilities and Infrastructure Budget Data Sheet (IFI)	Project Number	Gross Building Area	FY 2006 Approp (\$000)	FY 2007 Budget (\$000)	FY 2008 Budget (\$000)	FY 2009 Budget (\$000)	FY 2010 Budget (\$000)	FY 2011 Budget (\$000)	FY 2012 Budget (\$000)	FY 2013 Budget (\$000)	FY 2014 Budget (\$000)	FY 2015 Budget (\$000)	FY 2016 Budget (\$000)	FY 2017 Budget (\$000)
SITE NAME: Thomas Jefferson National Accelerator Facility														
PROGRAM: Nuclear Physics														
5.0 Maintenance & Repair														
5.1 Direct Funded (by HQ or Site Program)														
Safeguards & Security			50	52										
Subtotal 5.1 Total Direct Maintenance & Repair			50	52	-	-	-	-	-	-	-	-	-	-
5.2 Indirect (from Overhead or Space Charges)			2,600	2,800	3,050	3,100	3,200	3,400	3,700	3,800	4,000	4,300	4,400	4,500
Subtotal 5.2 Total Direct Maintenance & Repair			2,600	2,800	3,050	3,100	3,200	3,400	3,700	3,800	4,000	4,300	4,400	4,500
5.3 Direct Funded Deferred Maintenance Reduction (By HQ or Site Program)														
Tunnel Dry Pipe System			100											
Hall A VESDA			75											
Subtotal 5.3 Total Direct Deferred Maintenance			175	-	-	-	-	-	-	-	-	-	-	-
5.4 Indirect Funded Deferred Maintenance Reduction (By HQ or Site Program)														
Test Lab Primary Electrical				345	115									
CEBAF Auditorium Lighting & Sound System				31										
Waste Oil Storage Shed				20										
CHL Cooling Water Piping					100									
CHL Overhead Bridge Crane					20									
Test Lab Exterior Finish					170									
Test Lab Exterior Lights					15									
Storm Drainage Maintenance & Repair					140									
Accelerator Service Buildings & CHL Siding Repair					60									
Road Repair & Maintenance					100									
Subtotal 5.4 Total Indirect Deferred Maintenance			-	396	720	-	-	-	-	-	-	-	-	-
Total Indirect Maintenance & Repair			175	792	1,440	-	-	-	-	-	-	-	-	-
6.0 Indirect O&E Excess Elimination (demolition, sale, lease, transfer)														
6.1 Indirect O&E Excess Elimination (demolition, sale, lease, transfer)														
Building 59 (SRF Annex)		3,680					100							
Trailers 10, 34A, 34B, 34C, 34F, 34G (Technical Support Bldg Ph 1)		4,700						75						
Trailers 35, 52A, 52B, 52C (CEBAF Center Wing D)		5,000												75
6.1 Total Indirect Excess Elimination		13,380	-	-	-	-	100	75	-	-	-	-	-	75
6.2 Other Indirect Funded (includes modifications, additions, improvements, etc. that does not qualify as GPP or maintenance)														
BPA Financed Energy Projects (loan repayment)			572	572	572	572	572	572	572	379	379	379	379	379
6.2 Total Other Indirect O&E			572	572	572	572	572	572	572	379	379	379	379	379
Total Indirect O&E			572	572	572	572	672	647	572	379	379	379	379	454

Integrated Facilities and Infrastructure Budget Data Sheet (IFI)	Project Number	Gross Building Area	FY 2006 Area	FY 2007 Area	FY 2008 Area	FY 2009 Area	FY 2010 Area	FY 2011 Area	FY 2012 Area	FY 2013 Area	FY 2014 Area	FY 2015 Area	FY 2016 Area	FY 2017 Area
SITE NAME: Thomas Jefferson National Accelerator Facility														
PROGRAM: Nuclear Physics														
7.0 Area of Excess Eliminated														
List of projects, by type of funding, with project number, and excess AREA eliminated by fiscal year accomplished.														
Line Item														
CEBAF Center Addition, Phase 1 (TJNAF) (Remove existing trailers)		30,772	30,772											
GPP														
IGPP														
Operations/Expense														
Indirect Operations/ Expense														
Building 59 (SRF Annex)		3,680					3,680							
Trailers 10, 34A, 34B, 34C, 34F, 34G (Technical Support Bldg Ph 1)		4,700						4,700						
Trailers 35, 52A, 52B, 52C (CEBAF Center Wing D)		5,000												5,000
Transfer by sale or lease, or transfer to an outside federal agency														
Subtotal of Excess Facility Area Eliminated		44,152	30,772	-	-	-	3,680	4,700	-	-	-	-	-	5,000
Total Area to be Eliminated Each Year (Demolition, Sale or Transfer Completion Year)		44,152	30,772	-	-	-	3,680	4,700	-	-	-	-	-	5,000
Total Area to be Added by GPP, IGPP, and LI Construction (List Area Under Occupancy Year)		159,484	72,584				19,400	2,000	26,700		25,000			13,800

			TEC Range							
Project Title	Raw CAM P Score	Gross Building Area	Low End	High End	Mid Point	PED	OPC	Year 1	Year 2	Project Description
Test Lab Rehab	64.5		\$16,500	\$19,500	\$18,000	\$600	\$150	\$4,000	\$14,000	Building 58 Test Lab: This project will upgrade the 40+ year old electrical and mechanical systems, correct building code compliance items, mixed occupancy use issues, and discrepancies in building systems as well as make improvements in the overall use of space to optimize layout for current and planned use. Present technical infrastructure systems - including clean rooms - represent historical compromises that do not efficiently support the performance quality now required of accelerator cryomodule designs. About 7,000 SF of existing 2nd & 3rd floor office space in the high bay area will be eliminated. The improved process layout and use of space is expected to result in increased efficiency and improved safety.
CEBAF Center Addition Phase 2	62.5	70,000	\$13,976	\$18,908	\$16,442	\$1,046	\$165	\$1,046	\$15,396	CEBAF Center Addition Phase 2 (of 3) consists of a 69,150 SF, three story wing (similar to CEBAF Center Addition Phase 1) to replace about 5,000 square feet of existing trailers and, depending on staffing level, the majority of off-site leased office space in the City of Newport News Applied Research Center (ARC). The first and second floor primarily allows relocation of functions (library, document center, and conference rooms) currently in leased space. The third floor will provide open modular office space and small meeting rooms for 109 staff/users. This project will consolidate an additional major portion of our staff and provide a much-needed large meeting room to support the larger collaborations and conferences.

Facilities planned for disposition (real property and personal property trailers) are typically the result of construction of replacement facilities. Disposition is funded under both SLI and indirect projects. Projects for elimination are as follows:

Table V-5. Disposition

Project	Facilities to be eliminated	SF	Funding	Proposed FY
Oil Storage Bldg	058B	241	Indirect	FY06
CEBAF Center Phase 1	Trailers 11, 11A, 11B, Partial 16, 34 D, 34 E	22,000	SLI	FY06
Technical Support Bldg 1	10, 34A, 34B, 34C, 34F, 34G, 53A, 53B, 53C	8,200	Indirect	FY07
Technical Support Bldg 2	Trailers 94A, 96D, 101B	13,700	Indirect	FY07
SRF Engineering Test Facility	Building 59	3,683	Line Item	FY08
CEBAF Center Phase 2	Trailers 52A, 52B, 52C, 35, Offices in Test Lab High Bay	8,000	SLI	FY09
General Site Storage	~ 28 Transportainers	8,000	Indirect	FY11
Shipping/Receiving and Storage	Remaining Transportainers	12,160	Indirect	FY13

Below is a prioritized list of real property that the site would like cleaned for reuse or disposal over the planning period.

Property ID: RADCON Block Structure

Property Description: Legacy NASA shielding blocks transferred to DOE as part of Test Lab. Shielding blocks are activated but the level is currently unknown. The blocks were radiologically assayed by a NASA contractor to conduct a facility shutdown survey before the facility was turned over to the DOE. That contractor made a determination that the blocks were free from removable radiological contamination at that time. Blocks were used to construct a structure to contain activated materials awaiting disposal. Routine soil samples, taken over many years in the vicinity of these block, show no radioactive material associated with these blocks in excess of detection limits.

Operating or Not-Operating: Currently operating. Disposal plan calls for removal and disposal of stored material in FY08.

Contaminated or Not Contaminated Indicator: Some blocks (around 20% or so) were still activated or contained activated components. These blocks should not be considered "contaminated" from a radiological point of view. The blocks that have a measurable surface dose rate should be considered "volume activated" and, all blocks, measurable dose rate or not, require a DOE approved method for releasing them for unrestricted reuse.

Year Declared Excess: 2008

Gross Volume (Cubic Feet): 44,840 CF

Clean-up for reuse or disposal: Disposal

Disposal Method: Disassemble and use some blocks as underground shields for the fourth experimental hall and bury the remainder in an approved landfill.

Estimated Clean-up and Disposal Cost: Cost Range depending on activation level and final disposal \$500,000 - \$7,600,000

Estimated Date that Disposal is Complete: FY15

Funding Source: EFD program or lab overhead

Refer to Appendix 6 FY08 Integrated Facilities and Infrastructure (IFI) Crosscut Budget Submission

	Project Number	Gross Building Area	Prior Years (\$000)	FY 2006 Target Budget (\$000)	FY 2007 Target Budget (\$000)	FY 2008 Target Budget (\$000)	FY 2009 Target Budget (\$000)	FY 2010 Target Budget (\$000)	FY 2011 Target Budget (\$000)	FY 2012 Target Budget (\$000)	FY 2013 Target Budget (\$000)	FY 2014 Target Budget (\$000)	FY 2015 Target Budget (\$000)	FY 2016 Target Budget (\$000)	FY 2017 Target Budget (\$000)
SITE NAME: Thomas Jefferson National Accelerator Facility															
PROGRAM: Nuclear Physics															
1.0 Capital Line Item															
1.1 New Infrastructure Construction (facilities and additions)															
CEBAF Center Addition Phase 2	FY 16	70,000												8,000	9,000
FEL Addition Design (Non DOE Funds)	FY 07				300										
FEL LCW & Power (Non DOE Funds)	FY 08	500				800									
FEL Addition (Non DOE Funds)	FY 09	23,000					3,000	3,000							
FEL Vivarium (Non DOE Funds)	FY 13	2,000									1,000				
Subtotal 1.1		95,500	-	-	300	800	3,000	3,000	-	-	1,000	-	-	8,000	9,000
1.2 All Other Infrastructure Projects (recap)															
Test Lab Rehab (SLI Funded)								4,000	14,000						
Subtotal 1.2			-	-	-	-	-	4,000	14,000	-	-	-	-	-	-
Total Infrastructure Line Items (1.1+1.2)			-	-	300	800	3,000	7,000	14,000	-	1,000	-	-	8,000	9,000
1.3 Programmatic Line Items that Add Space															
12 GeV Conventional Facilities		26,700			PED	TBD	TBD								
Subtotal 1.3		26,700	-	-	-				-	-	-	-	-	-	-
Subtotal Line Item Projects (1.1+1.2+1.3)		122,200	-	-	300	800	3,000	7,000	14,000	-	1,000	-	-	8,000	9,000
2.1 GPP New Construction (facilities and additions)															
Accelerator Site Technical Building Ph 1	04-GPP-300-1	17,000	750		2,800										
East Site Drainage Improvements	06-GPP-300-1			700											
Miscellaneous projects	06-GPP-300-2			92											
Site Sidewalks	06-GPP-300-5			160											
Hall A VESDA Head Replacement (DOE HQ Funded)	06-GPP-300-6			75											
Tunnel Dry Pipe Sprinkler Pipe Replacement (DOE HQ Funded)	06-GPP-300-7			100											
Fabric Storage Bldg #2	07-GPP-300-1	2,700			250										
Separate Fire Alarm and Access Control Systems	07-GPP-300-2				300										
Building Metering	07-GPP-300-3				50	60	60	60	60	60					
Miscellaneous projects	07-GPP-300-4				100										
Communication Upgrade	08-GPP-300-1					300									
RADCON Waste Collection System	08-GPP-300-2					140									
Acid Neutralization Building Process Support	08-GPP-300-3					225									
Bldg 53 & 68 Cooling Tower Fan VFDs (Energy Saving)	08-GPP-300-5					70									
Miscellaneous projects	08-GPP-300-4					65									
Test Lab Parking Improvements	08-GPP-300-5					125									
Computer Center 1,000 KW UPS - infrastructure required for additional	08-GPP-300-6					1,000									
SRF Annex	08-GPP-300-7	25,000				2,500	2,000								
Machine Shop Covered Material Storage	08-GPP-300-8	2,000				340									
CEBAF Center Wing D (Trailers 35, 52A, 52B, 52C, Test Lab High Ba	09-GPP-300-1	13,800					2,444	1,760							
RADCON Storage Building	09-GPP-300-2	2,000					250								

	Project Number	Gross Building Area	Prior Years (\$000)	FY 2006 Target Budget (\$000)	FY 2007 Target Budget (\$000)	FY 2008 Target Budget (\$000)	FY 2009 Target Budget (\$000)	FY 2010 Target Budget (\$000)	FY 2011 Target Budget (\$000)	FY 2012 Target Budget (\$000)	FY 2013 Target Budget (\$000)	FY 2014 Target Budget (\$000)	FY 2015 Target Budget (\$000)	FY 2016 Target Budget (\$000)	FY 2017 Target Budget (\$000)
Miscellaneous projects	09-GPP-300-3						140								
Computer Center Chiller Plant	09-GPP-300-4	1,000					900								
Accelerator Site Technical Building Ph 2 (Trailers 94A, 96D, 101B)	10-GPP-300-1	16,000						2,780	840						
North Connector Parking Lot	10-GPP-300-2							320							
Miscellaneous projects	10-GPP-300-3							100							
CEBAF Center HVAC	10-GPP-300-4							500							
General Site Storage Bldg (2)	10-GPP-300-5	4,000						450							
West Site Retention Pond	11-GPP-300-1								900						
Bulk Material Handling Area	11-GPP-300-2								165						
West Site Waterline (Complete Fire Protection Loop)	11-GPP-300-3								185						
Accelerator Site Primary & Secondary Feeder Replacement	11-GPP-300-4								660	540					
Cafateria Serving Area Rehab	11-GPP-300-5								450						
Shipping & Receiving	11-GPP-300-6	21,000							1,500	1600					
Miscellaneous projects	11-GPP-300-7								150						
Hall A Power & Cooling Improvement	12-GPP-300-1									600					
North Connector Road Extension	12-GPP-300-2									245					
South Connector Road	12-GPP-300-3									200					
Counting House HVAC	12-GPP-300-4									400					
Accelerator Site LCW Controls	12-GPP-300-5									245					
User Offices in EEL	12-GPP-300-6	6,000								700					
Additional R&D Labs in EEL	12-GPP-300-7									800					
Miscellaneous projects	12-GPP-300-8									155					
Accelerator Site Road Improvements	13-GPP-300-1										400				
EEL HVAC	13-GPP-300-2										600				
Site Lighting Improvement	13-GPP-300-3										260				
End Station Refrigerator Building & Utilities	13-GPP-300-5	3,600									2,200	1,300			
Miscellaneous projects	13-GPP-300-6										260				
Accelerator Site Technical Building Ph 3	14-GPP-300-1	16,000										2,000	1,000		
Rebuild Rutherford Road	14-GPP-300-2											300			
Miscellaneous projects	14-GPP-300-3											323			
Northwest Parking Lot	15-GPP-300-1												350		
Miscellaneous projects	15-GPP-300-2												339		
Education /Visitor Center	16-GPP-300-1	22,500											2,200	2,200	
Canon Entrance	16-GPP-300-2	200												400	
Main Entrance Gate	16-GPP-300-3	200												600	
CEBAF Center Atrium Expansion	16-GPP-300-4	5,000												500	2,500
Miscellaneous projects	16-GPP-300-5													459	

	Project Number	Gross Building Area	Prior Years (\$000)	FY 2006 Target Budget (\$000)	FY 2007 Target Budget (\$000)	FY 2008 Target Budget (\$000)	FY 2009 Target Budget (\$000)	FY 2010 Target Budget (\$000)	FY 2011 Target Budget (\$000)	FY 2012 Target Budget (\$000)	FY 2013 Target Budget (\$000)	FY 2014 Target Budget (\$000)	FY 2015 Target Budget (\$000)	FY 2016 Target Budget (\$000)	FY 2017 Target Budget (\$000)
Perimeter Fence	17-GPP-300-1														900
Miscellaneous projects	17-GPP-300-2														632
Subtotal Base GPP:		158,000	750	1,127	3,500	4,825	5,794	5,970	4,910	5,545	3,720	3,923	3,889	4,159	4,032
3.0 Institutional General Plant Project (IGPP)															
Not Applicable															
Subtotal IGPP Projects															
6.0 Indirect O&E Excess Elimination (demolition, sale, lease, transfer)															
6.1 Indirect O&E Excess Elimination (demolition, sale, lease, transfer)															
Building 59 (SRF Annex)		3,680				100									
Trailers 10, 34A, 34B, 34C, 34F, 34G (Technical Support Bldg Ph 1)		4,700				75									
Trailers 35, 52A, 52B, 52C (CEBAF Center Wing D)		5,000							75						
Trailers 94A, 96D, 101B(Technical Support Bldg Ph 2)		3,700								75					
Trailers 53A, 53B, 53C (Technical Support Bldg Ph 3)		3,500												75	
6.1 Total Indirect Excess Elimination		20,580	-	-	-	175	-	-	75	75	-	-	-	75	-
6.2 Other Indirect Funded (includes modifications, additions, improvements, etc. that does not qualify as GPP or maintenance)															
BPA Financed Energy Projects (loan repayment)				572	572	572	572	572	572	572	379	379	379	379	379
10 MW Emergency Power Switch (loan Repayment)											250	250	250	250	250
6.2 Total Other Indirect O&E				572	572	572	572	572	572	572	629	629	629	629	629
Total Indirect O&E				572	572	572	747	572	572	647	704	629	629	629	704